MITSUBISHI

DEHUMIDIFIER

2005

No.MJW-0501A

SERVICE MANUAL

Model MJ-E16VX-S1

Sold from 2005

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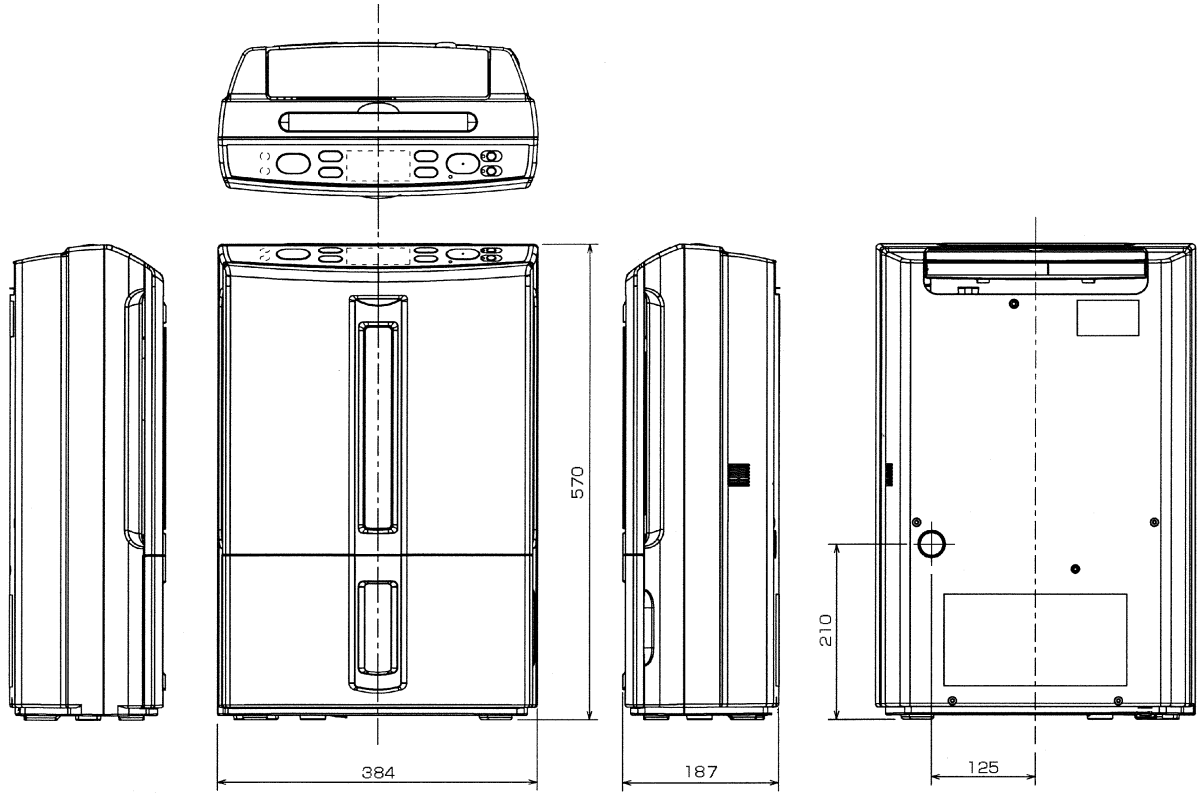
1. Product specifications

Item \ Model			MJ-E16VX-S1
Performance	Dehumidifying capacity (30°C room temperature, 80% relative humidity) (liters/day)		16.0
	Operating noise levels (dB)	Laundry	41
		Low	37
Electrical characteristics	Power supply (phases,V,Hz)		Single phase, 220-240V, 50Hz
	Power consumption (W)		275
	Operating current (A)		1.3
	Starting current (A)		5.5
Product performance	Color tone		Blue (A)
	Dimensions (H × W × D mm)		570 × 384 × 187
	Weight (kg)		11.7
	Coolant quantity (g)		120
	Evaporator		Slit fin
	Condenser		Slit fin
	Compressor	Compressor protection	Thermal overcurrent relay
		Model	XB460VTE
		Output (W)	150
		Winding resistance (Ω)(20°C)	Primary: 26.1 , subsidiary: 70.7
	Blower	Blower protection	With temperature fuse
		Type	Sirocco fan
		Output (W)	16
		Flow rate selection	4
		Speed (rpm)	Easy Dehumidifying: 680 or 720 / Laundry: 700 [720] / Low: 680 or 700 / Low Temp: 700 / Mildew Guard: 700 / Air Purifier: 680 / Drying Inside: 680 or 720
		Flow rate (m^3/min)	Easy Dehumidifying: 2.5 or 2.7 / Laundry: 2.6 [2.7] / Low: 2.5 or 2.6 / Low Temp: 2.6 / Mildew Guard: 2.6 / Air Purifier: 2.5 / Drying Inside: 2.5 or 2.7
	Operating room temperature (reference) (°C)		1 ~ 35 (°C)
	Defrosting method		Hot gas type
	Humidity control		Built-in humidity sensor
	Tank full protection		Lead switch (automatic)
	Tank capacity (liters)		Auto-stopper tripped with about 4.0 liters of water
	Continuous drainage		Commercial hose (inside diameter 15 mm)
	Operation modes		AUTO · EASY DEHUMIDIFYING · LAUNDRY · MILDEW GUARD · LOW · LOW TEMP · DRYING INSIDE · AIR PURIFIER
	Timer		On/Off timer (1-9h)
	Air cleaning performance		Yes
	Plug socket rating		16A

● The operating noise levels indicated are typical values measured in our anechoic room.

* The brackets [ ] enclose values measured at a room temperature of about 15°C or lower.

2. Outer Dimensions

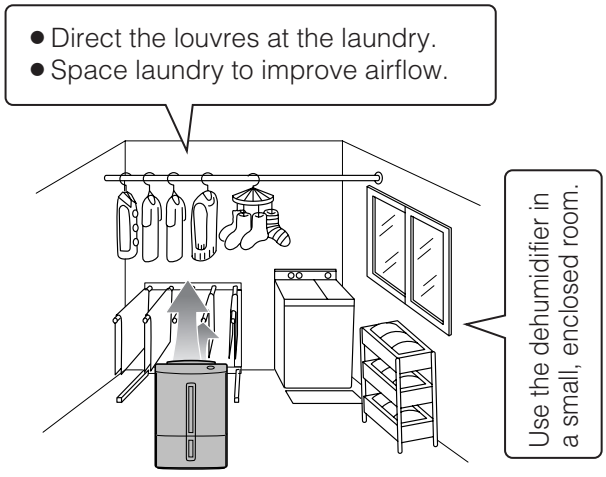


3. External View, Parts and Display Section

Drain the water tank before use

Refrain from opening doors/windows during operation

Drying laundry indoors



Maintain room temperature above 16°C with an air conditioner

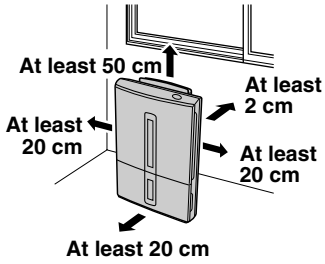
- Drying times will vary depending on the nature of the laundry and the room temperature. In low temperatures, drying takes about twice as long as normal. In low temperatures (10°C), drying takes about twice as long as when normal (20°C+).
- The airflow is strongest to the top right of the unit.

Installing your dehumidifier

Make sure to leave some space around the unit.

<For use in close proximity to a wall>

Stop the louvre in the vertical position. Blowing air at the wall may cause staining.

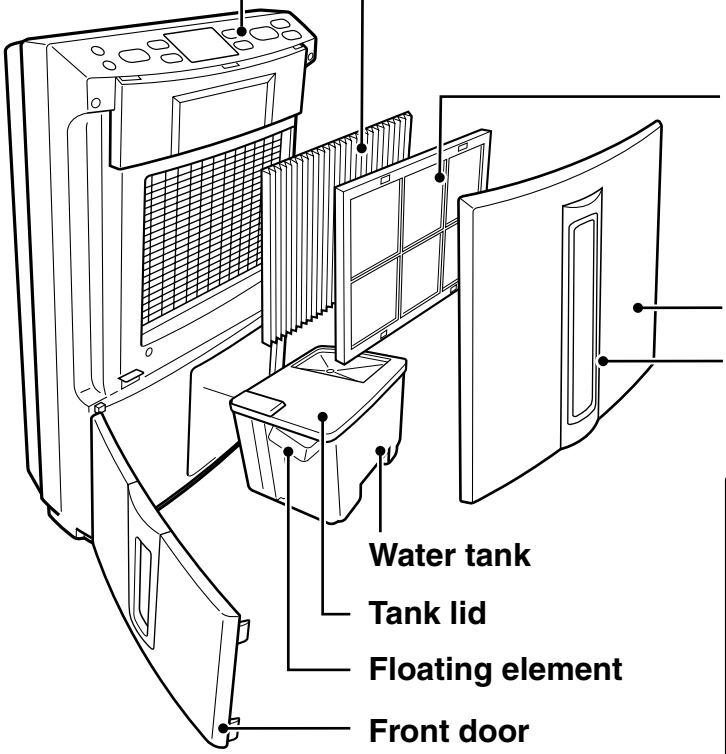


Operating noise

Place the unit on top of a mat. This reduces vibration and noise. It also prevents leaving depressions on carpets.

4. Names and Functions of Parts

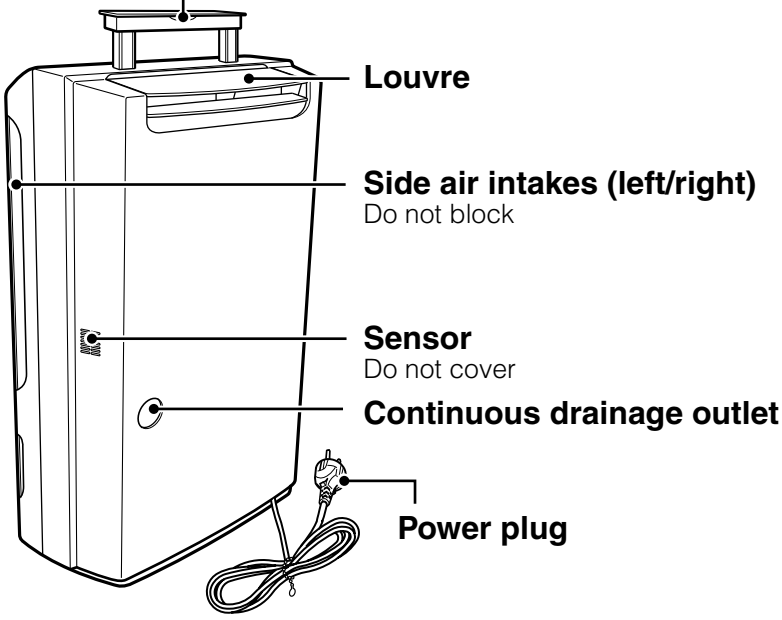
Front



What is a washable photocatalytic filter?

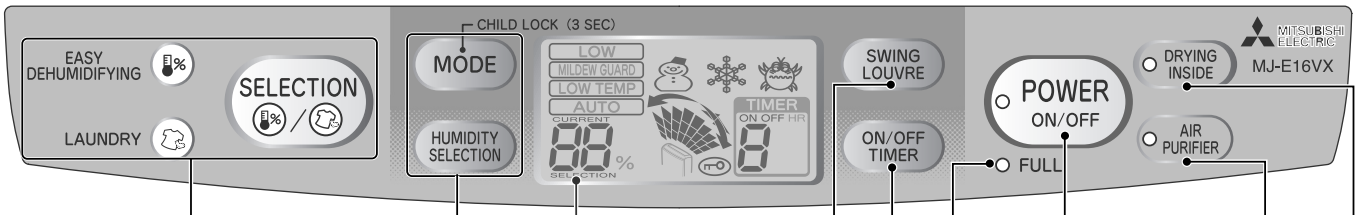
The washable photocatalytic filter has a two-layer construction consisting of a white particle filter and a blue air-freshener filter.
<Particle filter>
The fine particle filter removes pollen* and dust particles.
<Air-freshener Filter>
The special air-freshening agent contained in the fibres of the air-freshener filter absorbs odorants such as ammonia. The odor is broken down by photocatalysis renewing the air-freshening properties.
As the filter's particle and air-freshening properties are renewed by simply soaking and leaving it to dry in the sun, the air purifier can be used continuously over a long time.
Cigarette smoke and toxins found in smoke, such as carbon monoxide, cannot be removed with this filter.
* Diameter of pollen: approx. 10-100μm

Back



The water tank may contain water residue at time of purchase. This is from final product testing at the factory and is not due to a defect.

Control Panel



- **Lamps**
  Current mode lights
- **Selection button**
  Switches modes

- **Mode button**
  For switching from one operating mode to another
- **Humidity Selection**
  This is used to set the target humidity.

- **Child lock**
  To set the child lock, press the mode button for three seconds.

- **Swing louvre button**
  Sets swing louvre direction or locks it into position

- **ON/OFF Timer button**
  Sets timer

- **Tank full light**
  This lights up to warn that the water tank is full.

- **Power lamp**
  Lights when unit is ON.
- **Power button**
  Use this to switch the unit ON and OFF.

- **Air purifier lamp**
  Lights during air purifier only operation
- **Air purifier button**
  Switches to air purifier only operation

- **Drying inside lamp**
  Flashes when drying inside in progress.
- **Drying inside button**
  Activates/deactivates drying inside.

You can select from 7 operating modes

- **EASY DEHUMIDIFYING**
- **LAUNDRY**
- **LOW**
- **MILDEW GUARD**
- **LOW TEMP**
- **AUTO**

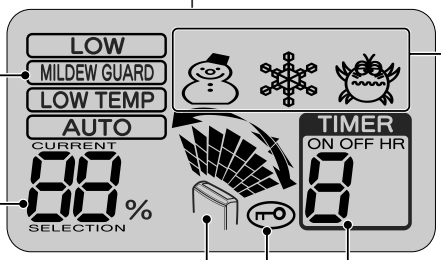
All modes include dehumidifier and air purifier functions.

- **AIR PURIFIER**

Air purifier only operation. The dehumidifier function is disabled.

LCD Panel

All indicators on the LCD panel shown below.



- **Mode Indicator**
  Indicates the current operating mode.

- **Humidity Indicator**
  This indicates the **approximate humidity**
  CURRENT indicates the current humidity
  SELECTION indicates the humidity setting in AUTO mode
  The current humidity is displayed in a range from 30 to 80%.

- **Swing monitor**
  Indicates the direction of the swing louvre.

- **Timer display**
  Displays the time set for the ON/OFF timer.

- **Child lock indicator**
  Displayed while child lock is active

- **Information display**
  Indicates room and unit condition

Low Temperature Indicator

The ☃ indicator comes on if the room temperature drops below 15°C. Activating Low Temp mode is recommended.

DEFROST Indicator

Airflow (dehumidifying) will stop and the frost that has accumulated inside will be melted and dropped into the tank when the ❄ indicator is on. Please wait a moment as operation will resume in around 5 minutes.
While in DEFROST mode, airflow (dehumidifying) and the louvre will stop. The sounds coming from the unit will also change.
DEFROST will start automatically when room temperature drops below 15°C (This may be as often as once every 40 minutes).

High humidity warning

The indicator flashes when the humidity in the room exceeds 75%. Activating the dehumidifier is recommended when the indicator is flashing.

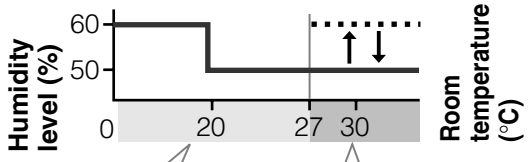
If the High humidity warning is not used, remove the power plug from the power socket.

Modes

● EASY DEHUMIDIFYING

The unit operates intermittently controlling the airflow to remove the damp feeling in the air. (There is no need to set the humidity level) When the room temperature is high, the blower operates to decrease the damp feeling.

The airflow or louvre operation may stop according to the humidity level.



Room temperature is below 27°C - the unit automatically sets the humidity level according to the temperature.

Room temperature is above 27°C - the unit lowers the humidity level to 50%, then activates the blower. The dehumidifier is reactivated when humidity rises to 60%.

● LAUNDRY

The unit operates for 12 hours and automatically switches off.

Information

- **Drain the tank before use.**
  The unit may stop before the washing dries because of a full tank.
- **Do not use in conjunction with the OFF timer.**
  The timer may turn the unit off before the washing dries.
- **The following conditions prevent clothes from drying well:**
  Room temperature below 15°C, large volume of laundry; laundry not spaced well; clothes of thick fabric and spacious room.

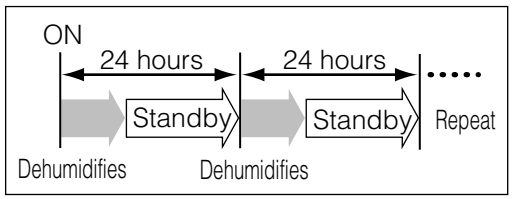
● LOW

The dehumidifier operates regardless of the humidity level. Airflow is weak.

● MILDEW GUARD

The unit lowers humidity levels automatically once a day, suppressing mildew growth. Use the unit within the effective floor space for maximum benefits.

- The unit operates intermittently for 2-4 hours a day (24 hours).
- The operating time varies depending on the humidity. The unit continues to operate when the humidity does not decrease.
  - Humidity 40%→Approx. 2 hours
  - Humidity 50%→Approx. 4 hours



Information

- Refrain from turning on ventilation fans or opening windows or doors as this lowers performance.
- Mildew growth may still occur due to the fungus type and conditions of the room.
  E.g. Rooms that contain excessive condensation, bathrooms, and places with bad airflow (insides of closets and behind furniture).
- This mode does not remove existing mildew.
- Do not use in conjunction with OFF Timer mode. Effects may not be achieved.

● LOW TEMP

The unit operates continuously and automatically by controlling airflow according to room temperature. The air flow is strongest below 15°C. The use of LOW TEMP mode is recommended when the Low temperature indicator is lit.

Information When the temperature is low, condensation may still form on windows exposed to the outside air even when LOW TEMP mode is operating

How is mildew growth suppressed?

Mildew is unable to produce new spores (similar to plant seeds) if dried as mycelia. The Mildew Guard feature applies this principle (However, the spores themselves are resilient to dry conditions.). “Identification of Aspergillus and Penicillium”
<Research paper by Dr. K. Abe of the Environmental Biology Research Center>

● AUTO

The unit maintains the humidity level by automatically controlling airflow and operating intermittently as necessary. All you have to do is set the humidity level.

- The unit turns off when current humidity decreases past the set humidity level, and restarts when the level is exceeded.
- The unit operates for 6 minutes continuously regardless of the humidity level immediately after turning the power on.

Information

Frequent use of exits and room size/conditions may cause the humidity to not reach the set level.

<To view set humidity level/ To set humidity level>

- Pressing the button once displays the set humidify level with the SELECTION indicator. After 3 seconds, the display returns to the current humidity display.

- Pressing HUMIDITY SELECTION while SELECTION is displayed sets the humidity level. Each time the button is pressed, the humidity setting changes.

70 → 65 → 60 → 55 → 50

● AIR PURIFIER

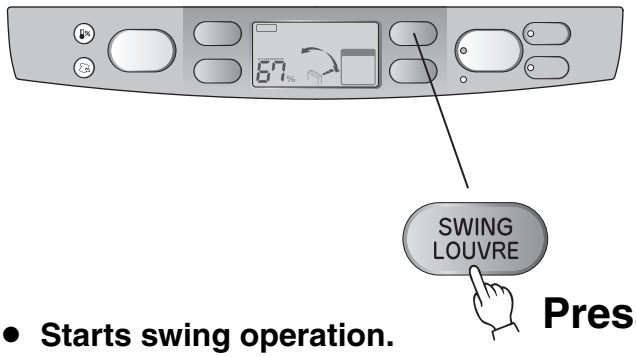
The unit cleans the air by passing it through the photocatalytic filter. The dehumidifying function is disabled.

Information

- The air passes through the photocatalytic filter in all modes, cleaning the air even if the air purifier lamp is not lit.
- Cigarette smoke and toxins found in smoke, such as carbon monoxide, cannot be removed with this filter.

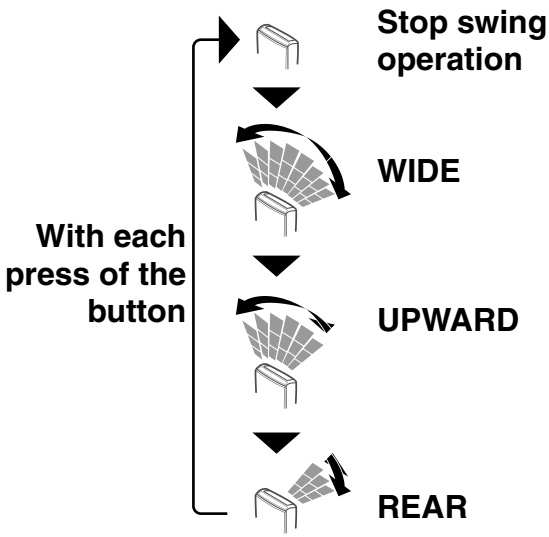
● Swing louvre function (how to read the swing monitor)

The louvre can be made to swing. Select from the 4 possible settings to suit the purpose.



- **Starts swing operation.**
- **The swing monitor is displayed.**

The swing operation stops when the power cord is unplugged.



This indicates the range of louvre swing. (The louvre and monitor do not move in synchronization.)

Information

- The level of noise emitted from the unit varies according to the angle of the air-flow.
- The louvre may stop up to a maximum of 8 seconds to correct its position, after which it will start moving again.
- If the louvre is knocked out of the desired angle, readjust by following the above steps.

Note

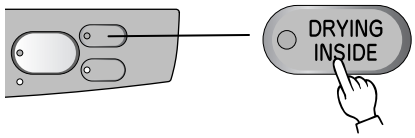
Stop the louvre in the vertical position when using the unit against a wall. Blowing air at the wall may cause staining.

● Drying inside

The inside of the unit can be dried to suppress mildew growth on the cooler.
On days the dehumidifier is used, drying inside is recommended.

Automatic operation

To activate drying inside after every use.



Press while the unit is on

● **Drying inside standby**
(Drying inside lamp lit)

Drying inside starts when operation ends
When the unit is turned off, LAUNDRY mode ends, or the OFF timer ends.

● **Drying inside starts**
The Drying inside lamp flashes, the humidity indicator turns off, and the louvre stops in the vertical position.

Drying inside mode

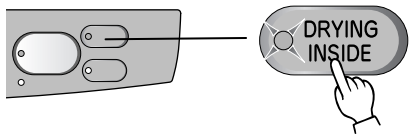
● **Drying inside ends**
The Drying inside lamp turns off and the louvres shut.

<To deactivate automatic operation>

Press the Drying inside button while the unit is on (the Drying inside lamp turns off)

Manual operation

To activate drying inside by pressing a button.



Press while the unit is off

● **Drying inside starts**
The drying inside lamp flashes, the humidity indicator turns off, and the louvre stops in the vertical position.

Drying inside mode

● **Drying inside ends**
The drying inside lamp turns off and the louvres shut.

To abort drying inside

Press the drying inside button while the unit is performing drying inside (the Drying inside lamp turns off)

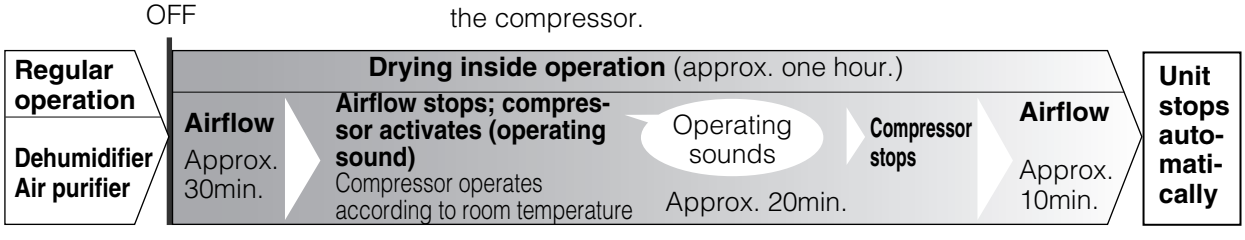
Press the power button to abort drying inside, and resume normal operation.

Information

- Connecting/disconnecting the power plug deactivates automatic operation.
- This function does not remove existing mildew. Also, aborting drying inside may cause the benefits to diminish.
- Do not close the louvres while drying inside as this causes noise.
- The moisture expelled from inside the unit may cause the humidity level of the room to rise.
- The air leaving the unit may appear white depending on the humidity or temperature of the room.
- The moisture expelled from inside the unit may smell due to odorants* that were not caught by the filter dissolving in the water.
  * The photocatalytic filter is mainly for absorbing ammonia.
- The OFF timer cannot be set during drying inside.

<Drying inside operation>

This operation takes approximately one hour. However, when the room temperature is below 1°C, drying time is shortened to protect the compressor.



[Lamp Indicator]

◯ FULL Tank full light

The unit automatically shuts down and indicates with the light and sound that the water tank is full. Empty the water tank.

- **Tank full light ◯ lights**
  (The unit beeps continuously.)
- **Air flows stops (louvre stops)**
- **Swing monitor turns off**
- **Compressor turns off**

- After removing the water and replacing the tank, the Tank full light will go off, and the unit will automatically return to operation mode.
- When the Tank full light is lit, no operation but ON/OFF is possible.

[Timer Operation]

OFF timer operation

The OFF timer can be set for 1 to 9 hours.
Set the timer when the power is switched on.

To set

1 **Switch the power on.**

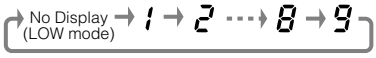
2 **Select operating mode.**
Select desired operating mode.

3 **Change the louvre swing direction.**
Select the desired setting.

4 **Set the operating time.**

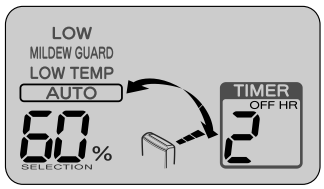
Press

- **When pressed once the figure [1] and [OFF] appear.**
- **Each subsequent press changes the display in order from 1 to 9 hours. (Hold the button to run automatically through the numbers.)**



→ The OFF timer is set.

The following is an example of a display indicating AUTO dehumidifying (set to 60%), swing set to WIDE and the OFF timer set for 2 hours.



- **The time remaining until the unit switches itself off is indicated in increments of one hour with a flashing numeral.**
- **When the set time is reached, the unit switches itself off and the louvre closes automatically.**
- **Drying inside will commence if it has been activated.**

To cancel the OFF timer

<When you want to turn the unit off>
Press the POWER button. (Power off)

Press

- **The OFF Timer is cancelled.**

<When you want to disable the Timer OFF mode, and continue operation>
Keep pressed until the remaining time display disappears to return to continuous operation.

Press

- **The OFF Timer is cancelled.**

Information

- Empty the water tank before operating. The unit stops and the Tank full lamp lights if the tank becomes full during operation.
- The OFF timer and ON timer cannot be set at the same time.
- Do not use timer OFF mode in conjunction with LAUNDRY or MIDEW GUARD.
- The OFF timer cannot be set during internal drying.

ON timer operation

The ON timer can be set for 1 to 9 hours.
Set the timer when the power is switched off.

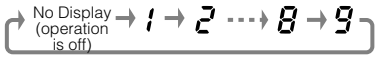
To set

1 **Switch the power off.**

2 **Set the time you wish the unit to turn on.**

Press

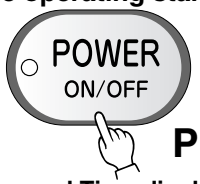
- **Press once. The Power lamp, Mode indicator, and a [1] on the digital display flash. The [ON] indicator lights.**
- **Each subsequent press changes the display in order from 1 to 9 hours. (Hold the button to run automatically through the numbers.)**



3 **Select operating mode.**
Select desired operating mode.
Set drying inside (auto) as desired.

4 **Change the louvre swing direction.**
Select the desired setting.

5 **Confirm the operating start time.**

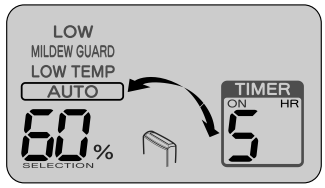


Press

- **Power lamp and Time display light.**

→ The ON timer is set.
The unit informs you if you forget to press the Power button by making the Time display and Mode indicator blink and sounding an alarm for 1 minute.

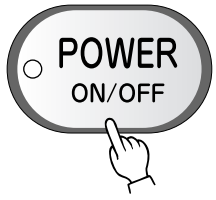
The following is an example of a display indicating AUTO dehumidifying (set to 60%), swing set to WIDE and the ON timer set for 5 hours.



- **The time remaining until the unit switches itself on is indicated in increments of one hour.**
- **When the set time is reached, the unit switches itself on.**

To cancel the ON timer

Press the Power button. (Power off)



Press

- **The ON timer is cancelled.**

Information

- Drying inside is deactivated when the ON timer is set during internal drying operations.
- The ON timer function is not operable using a commercially-available timer plug outlet.

5. Technical points

5.1 The technical points of the new products

1) Drying inside

During dehumidification, moisture accumulates on the heat exchanger. If left, this can lead to mildew growth, which is circulated around the room with the air discharge. Drying inside starts automatically after operation, and dries any moisture inside the unit.

2) Powerful 16-litre/day dehumidifying

The uncomfortable damp feeling caused by humidity is something that needs to be removed quickly. Mildew can grow and damage the home or clothing when closets, dressing rooms, shoe cabinets, and other spaces where humidity is prone to collect are not dehumidified. A single high-capacity unit is effective in dehumidifying and drying various locations throughout the home, quickly moving from one point to the next.

3) Room humidity and sensible temperature comfortably controlled

The EASY DEHUMIDIFYING mode controls humidity according to room temperature. If the room temperature rises during dehumidification, use CIRCULATION mode (*1) to lower the sensible temperature.

*1 The automatic dehumidification and blower modes operate alternately controlling the sensible temperature and humidity to a comfortable level (50%–60%).

4) Washable photocatalytic filter

The photocatalytic deodoring filter and particle filter are integrated.
This filter collects ammonia, the base for household smells, as well as dust, fungus spores, and pollen. It is easy to clean, meaning longer lasting performance.

5.2 Operation and Performance

Working temperature

Dehumidification is possible with a room temperature of 1 – 35°C. If the room temperature exceeds 35°C, however, the temperature inside the unit will increase; therefore, the protective device may activate and halt operation in some cases. For this reason, the louvres should be aimed upward.

- If the room temperature is lower than 1˚C, there is danger of the removed water freezing, making dehumidification impossible, so the fan will start operating.

Defrosting

The unit may display ❄ during operation and stop air flow, followed by a change in the operating noise. The unit has stopped the airflow, and is melting internal frost into the water tank. The unit will resume automatically when the defrost operation completes.

[This operation will be performed automatically when the room temperature is approximately 15°C or lower. (When humidity is high, this will occur approximately once every 40 minutes for 5 – 10 minutes.)]

Wait for 3 minutes before dehumidifying

The dehumidifier will not operate for 3 minutes when the unit is turned on immediately after being turned off or plugged in. (In order to protect the compressor.)
When dehumidifying begins, the operational noise increases. This is not a malfunction.

Room temperature may rise 2-4°C during operation

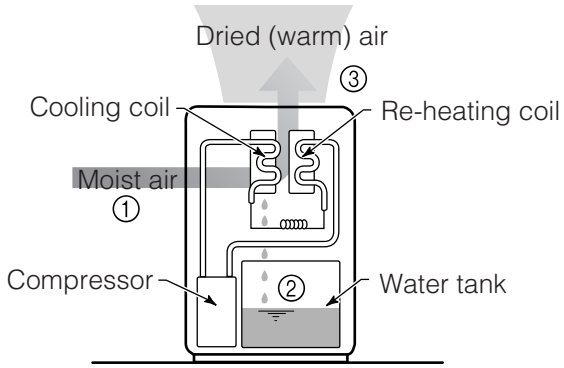
The dehumidifier does not have a cooler function. Due to heat produced during operation, the room temperature may rise 2-4°C As a result, the unit may blow warm air, but this is not due to a malfunction. During winter, the air may not feel warm as the temperature is below body temperature.

How does the dehumidifier work?

If you pour cold water into a cup, the air around it becomes cold, causing water droplets to form on the surface of the cup.
The dehumidifier takes advantage of this phenomenon to remove moisture from the air.

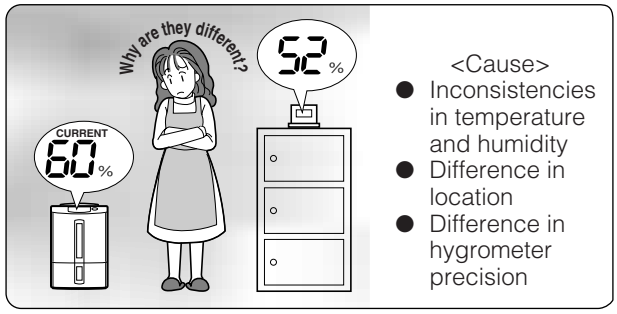
① The unit draws air from the room, cools it with its cooling coil, causing the moisture to transform into water droplets.
② The water droplets fall into the water tank.
③ **The dehumidified air is reheated by the heating coil, and then discharged.**

The humidity of the room is thus reduced by repeating steps ①, ②, and ③.

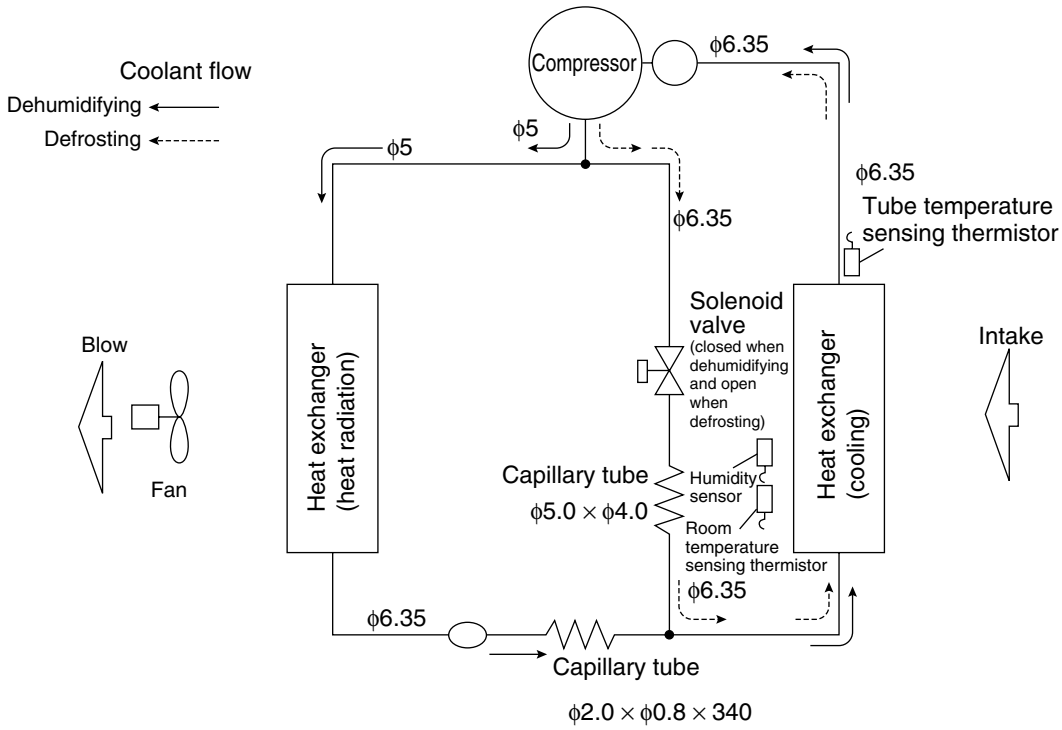


The humidity reading on the unit may differ from a hygrometer in the same room

Even in the same room, temperature and humidity levels may differ from place to place. If the hygrometer and the unit are in different parts of the room, the humidity levels are prone to differ.
Moreover, humidity levels differ between places that have good and no airflow.
Use the reading on the unit as an estimate.



5.3 Coolant Circuit



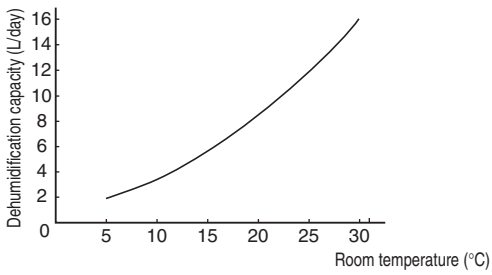
5.4 Performance curve

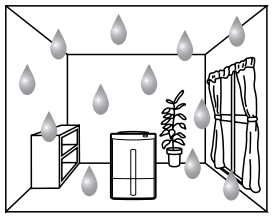
When the temperature and humidity are low, the amount of water collected is decreased.

In winter, because the temperature is lower than in summer, the effects of the dehumidifier decrease dramatically as shown in the graph below.
Although less water collects in the tank, this is not a malfunction.

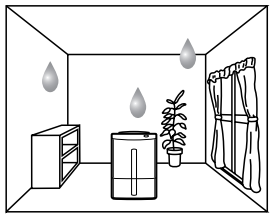
* If the temperature is low, but the humidity is high due to snow or rain, operating the unit in LOW TEMP mode will yield better results than in LOW mode.

Values for LOW when humidity is 80%.





Summer (humidity)



Winter (dampness)

- The values shown on the graph were measured at constant temperature and humidity and do not reflect values obtained in actual usage conditions.

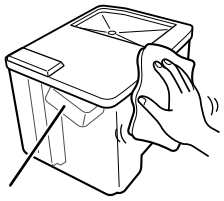
Maintenance

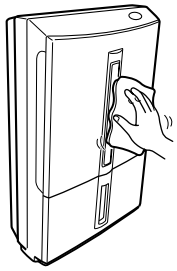
Do not use detergents, cleaning agents for heat exchange equipment, abrasive powders, chemically treated dusters, gasoline, benzene, thinners or other solvents, as they can damage the unit or the water tank, which may result in leakage.

Cleaning

Water tank • Main unit

Wipe with a soft cloth.





Floating element
Do not remove or dismantle.

- The unit draws in dust present in the air, and this may cause the tank **to gradually become dirty**. If the dirt does not come off easily, wash with cold or warm water, then wipe with a soft, dry cloth.
- Mildew may form in the tank unless kept clean.

Once every two weeks

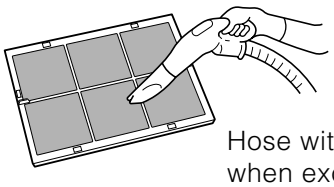
Pre-filter

Debris clogging the pre-filter reduces the effectiveness of the dehumidifier.
Clean once every 2 weeks.

1 Remove the front panel and pre-filter.

2 Remove the photocatalytic filter.

3 Clean the pre-filter.



Remove grit with vacuum cleaner

Hose with lukewarm water when excessively soiled.
Dry well.

4 Fit the photocatalytic filter.

5 Attach the pre-filter and front panel.

Once every three months

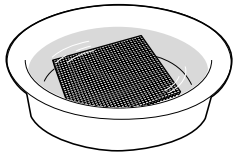
Photocatalytic filter

Soaking the filter in water, and leaving it to dry in the sun renews the performance and prolongs service life. Perform this every three months.

1 Remove the front panel and pre-filter.

2 Remove the photocatalytic filter.

3 Soak the photocatalytic filter in water.

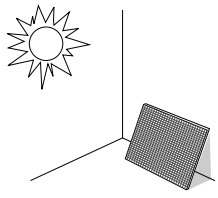


Soak in cool to lukewarm water for 30 minutes.

Do not use detergent or hot water.
Also, do not brush or rub while soaking as this may damage the filter.

- Stains may remain on the filter, but should not affect performance.
- The filter can be soaked for a total of eight times. After that, replace with a new filter.

4 Dry the photocatalytic filter.



Dry well in the sun
(The performance of the filter renews with soaking, and the photocatalytic effect of the sunlight removes remaining odorants)

Do not hang with pegs as this may damage the filter.
Do not use the filter while wet.

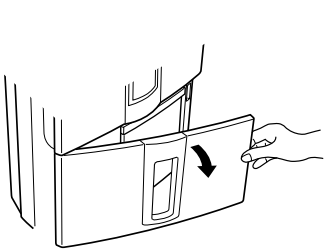
5 Fit the photocatalytic filter.

6 Attach the pre-filter and front panel.

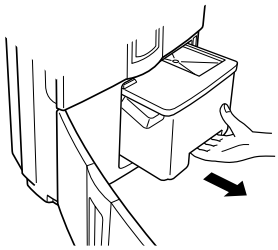
Removing Water from the Tank

The unit automatically shuts down and lights the Tank full lamp when the tank (approximately 4L) is full.
Empty the tank.

1 Remove the water tank.

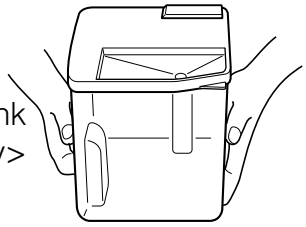


Open the front door.

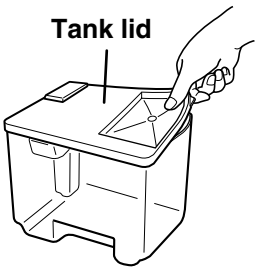


Grasp handle and slide out.

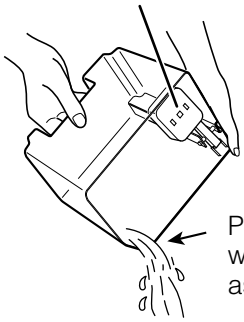
<Hold the tank this way>



2 Remove the tank lid, and empty.

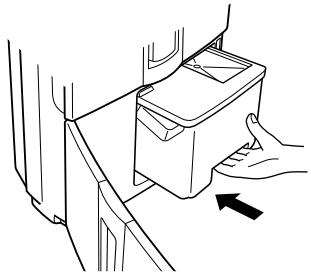


Floating element
Do not remove or dismantle the float.



Pour the water out as shown.

3 Reattach the tank lid and replace the water tank.



Confirm that the lid is securely attached to the water tank, and push the tank in. Close the front door.

- If the lid is not properly closed, you may have problems removing the tank.
- If the tank is not installed correctly, the tank full light will come on, and the unit will not operate.

Note

Do not remove or dismantle the floating element in the tank. If it is removed, the unit cannot detect when the tank is full, and this could result in leakage.

Replacing the Air Purifying Filter

The air purifying filter is disposable.
Make sure to replace the filter when it becomes dirty.

Replacing the photocatalytic filter

Although the photocatalytic filter lasts roughly 2 years, replace it when:

- **You have soaked the filter 8 times.**
- **The photocatalytic filter has turned brown due to cigarette smoke or black with dust.**

Filter life differs on usage and environmental conditions.

Remove the front panel and pre-filter to replace the photocatalytic filter.

Parts sold separately

Photocatalytic filter for replacement

- Type: MJPR-10TXFT
- Type code: 5C5 815

For these items contact your nearest Mitsubishi Electric dealer.

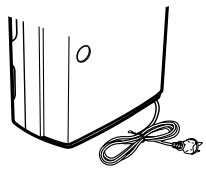
Storage

After switching the unit off, leave for one day until any water inside has had time to run off, then carry out the following steps.

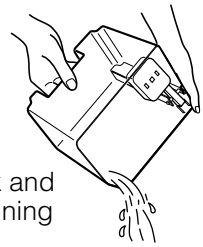
1 Perform drying inside

Performing drying inside to prevent mildew growth is recommended.

2 Bundle power cord.

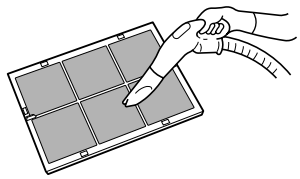


3 Remove the drainage water.



Empty the water tank and wipe away any remaining drops of water.

4 Clean the pre-filter.



Remove grit with vacuum cleaner

5 Store the unit.

- **When you are sure that all parts of the unit are dry, cover it with a cloth to keep it from dust.**
- **Store the unit in an upright position in a place not exposed to direct sunlight.**

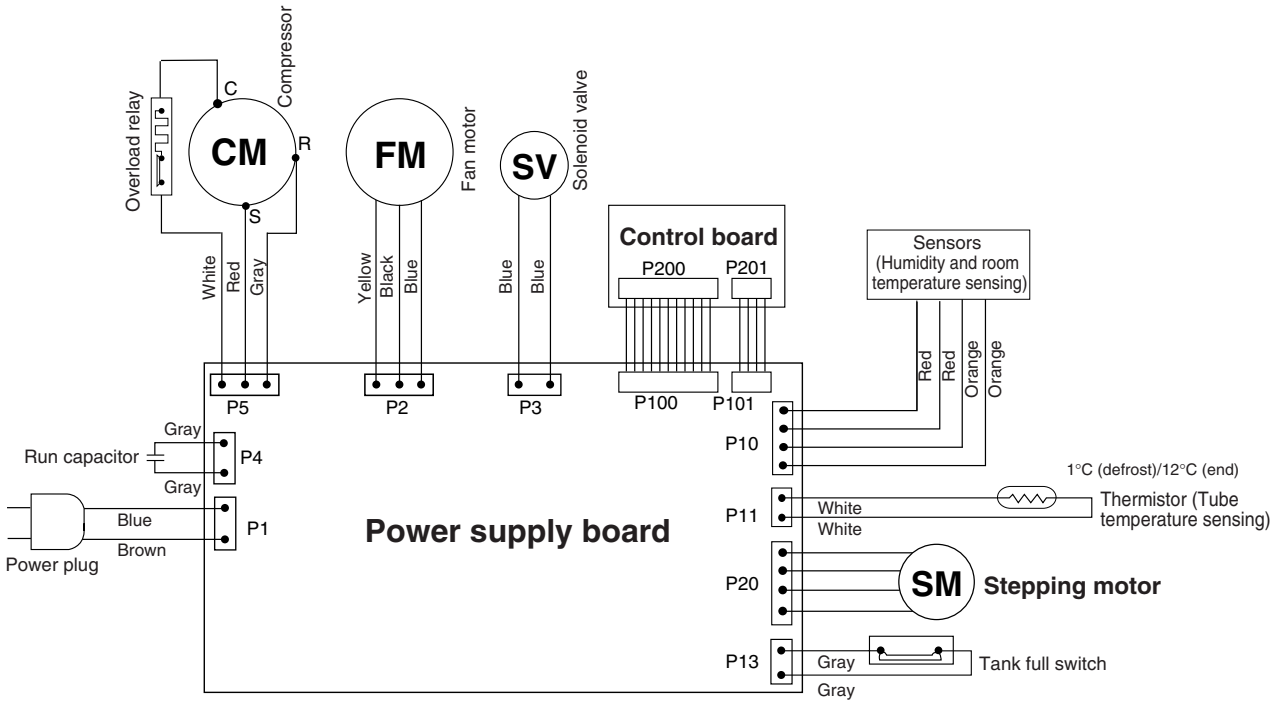
When disposing the unit

Dispose according to the garbage regulations in your district.

- Photocatalytic filter
  Material: PET and PS
- Unit
  Do not disassemble. Dispose according to the garbage regulations in your district.

7. Wiring Diagram and Block Diagram

7.1 Wiring Diagram



Safety Devices

(1) Current fuse .....Overcurrent flow caused by deterioration in electrical parts or other problems turns the power source to OFF.
<Current setting: 2A>

(2) Motor protector (Overload relay).....The compressor stops operating if the room temperature exceeds 35°C. The compressor will also shut down when malfunctions or other problems cause the current flow to exceed 5.3A.

(3) Control circuitry .....The room temperature thermister senses temperature below about 0°C, and shuts down the compressor.

(4) Thermal fuse .....When blower motor temperature exceeds 133°C due to blower locking or other malfunctions, blower operation shuts down.

7.2 Function List

		Operation off	Operation mode													
			Dehumidifying operation													
			Auto	Low	Mildew guard	Low Temp	Easy dehumidifying	Laundry	Air purifier	Drying inside	Tank full	Defrost	Off timer on	On timer being set	On timer counting	Child lock
	Compressor	OFF	—	ON	—	ON	—	—	OFF	—	OFF	ON	—	OFF	OFF	—
	Blower	OFF	—	ON	—	ON	—	—	ON	—	OFF	OFF	—	OFF	OFF	—
	Solenoid valve	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	—	OFF	ON	—	OFF	OFF	—
	Swing louvre	Closed	▲	△	▲	△	▲	▲	▲	Upward	OFF	OFF	▲	Closed	Closed	—
LED indicator	**Power**	×	○	○	○	○	○	○	○	×	×	○	○	◎	○	—
	Selection	×	×	×	×	×	Dehu-midifying	Laundry	×	×	×	□	□	■	□	—
	Air Purifier	×	×	×	×	×	×	×	×	×	×	×	□	■	□	—
	Tank full	×	×	×	×	×	×	×	○	×	○	×	×	×	×	—
	Drying inside	×	×	×	×	×	×	×	×	◎	×	×	×	×	×	—
LCD indicator	**Humidity (set/current)**	○	○	○	○	○	○	○	○	×	○	○	○	○	○	—
	Operation mode	×	AUTO	LOW	Mildew guard	Low Temp	×	×	×	×	×	□	□	■	□	—
	Swing area	×	△	△	△	△	△	△	△	×	×	△	△	△	△	—
	Swing monitor	×	▲	▲	▲	▲	▲	▲	▲	×	×	×	▲	×	×	—
	On/off timer	×	×	×	×	×	×	×	×	×	×	×	○ Off	◎ On	○ On	—
	Mildew guard	—	×	×	×	×	×	×	×	×	×	×	×	×	×	—
	Defrost	×	×	×	×	×	×	×	×	×	×	○	×	×	×	—
	Low temp	×	☆	☆	☆	☆	☆	☆	☆	×	×	☆	☆	☆	☆	—
	Child lock	—	—	—	—	—	—	—	—	—	—	—	—	—	—	○
Switch	**Operation**	○	○	○	○	○	○	○	○	○	○	○	○	○	○	×
	Auto	×	○	○	○	○	○	○	○	×	×	○	○	○	○	×
	Operation switch	×	○	○	○	○	○	○	○	×	×	○	○	○	○	×
	Selection	×	○	○	○	○	○	○	○	×	×	○	○	○	○	×
	Air purfier	×	○	○	○	○	○	○	○	×	×	○	○	○	○	×
	Swing louvre	×	○	○	○	○	○	○	○	×	×	○	○	○	○	×
	On/off timer	○	○	○	○	○	○	○	○	×	○	○	○	○	○	×
	Drying inside	○	○	○	○	○	○	○	○	○	○	○	○	○	○	×
	Child lock	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Note ○ : Display lamp/Operable
◎ : Timer – flashes when on
× : Off/stopped/inoperable
△ : Operable only when swing on/lit
▲ : Operable only when swing on and blower fan rotates
□ : LCD lights at each operation mode
■ : LCD flashes at each operation mode
☆ : Lights at room temperatures of 14°C or under
– : Varies by conditions.
ON : ON LED lit or flashing
OFF : OFF LED lit

<Operation Control>

① Specifications shared at all operation modes
The compressor and blower fan will operate for about 6 minutes after turning on the operation switch or activating the compressor, regardless of humidity or temperature levels.

② Humidity set operation
Compressor and blower fan operation will switch by current humidity and set temperature.

	Decline in current humidity	Rise in current humidity	Fan temperature table			Compressor
			←27°C	29°C→ ←34°C	36°C→ ←	
Current humidity – Set humidity	↓	↑ +5%	Rank 1	Rank 2	Rank 5	ON
	+3% ↓	↑ +1%	Rank 1	Rank 2	Rank 5	ON
	−1% ↓	↑	Rank 0	Rank 0	Rank 0	OFF

③ High, Low, Low Temp, Mildew Guard, Air Purifier

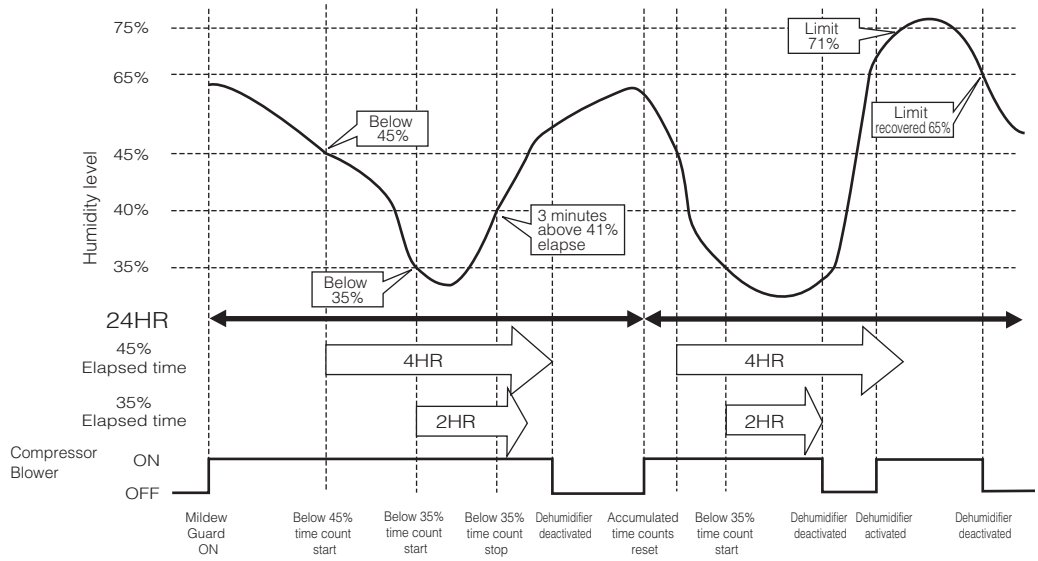
	Compressor	Fan temperature table			
		→←14°C	16°C→ ←27°C	29°C→ ←34°C	36°C→ ←
Low	ON	Rank 1	Rank 1	Rank 2	Rank 5
Low Temp	ON	Rank 6	Rank 1	Rank 2	Rank 5
Mildew Guard	ON	Rank 4	Rank 1	Rank 2	Rank 5
Air Purifier	OFF	Rank 1	Rank 1	Rank 1	Rank 1

④ Mildew Guard mode

1. Outline of Control
   (a) Lowering the temperature once a day 'suppresses' mildew growth.
   (b) The dehumidification time changes depending on how much the temperature was lowered (40%: 2 hours, 50%: 4 hours).

Target part	Compressor	Airflow fan	Solenoid valve	Louvre
Operation	ON/OFF	Rank control	OFF	ON/OFF

2. Under the following conditions, mildew guard will clear the time count and restart with initial settings.
   Mildew guard starts with dehumidifier operations by turning ON the compressor and fan regardless of the present humidity or time.
   (a) The power is turned ON when mildew guard is selected (i.e.: power button is turned ON or ON timer time is reached).
   (b) Mildew guard is selected with the MODE button.
   (c) Mildew guard is reactivated by operating the air purifier button (Air purifier ON → OFF).
   (d) Mildew guard is run for 24 hours.
3. While mildew guard is operating, the dehumidifier is deactivated under the following conditions.
   (a) Current humidity below 35% detected followed by 2 hours of below 40%.
   However, the accumulated time is cleared if the current humidity breaches 41% for 3 consecutive minutes during the count.
   (b) Current humidity below 45% detected followed by 4 hours of below 50%.
   However, the accumulated time is cleared if the current humidity breaches 51% for 3 consecutive minutes during the count.
4. After being deactivated in step 3, if the humidity level reaches 71%, the dehumidifier is automatically activated and runs until the level drops below 65%. Below 65%, the dehumidifier remains deactivated until the humidity level again reaches 71% (limiter dehumidifier operation).



5. Mildew guard mode is disabled in the following cases.
   (a) The mode button is used to activate Low Temp mode.
   (b) The selection button is used to activate the previously set mode (easy dehumidifying/laundry).
   (c) The air purifier button is used to activate air purifier operation.

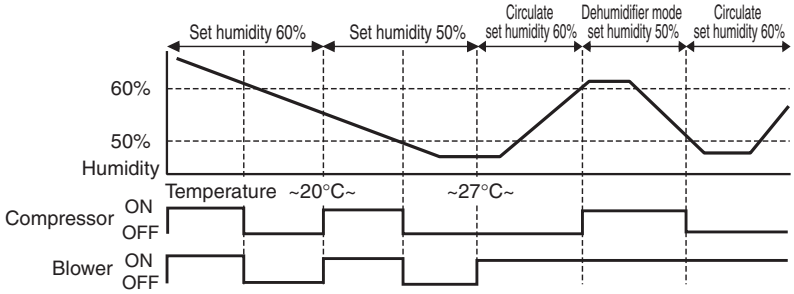
⑤ Easy Dehumidifier

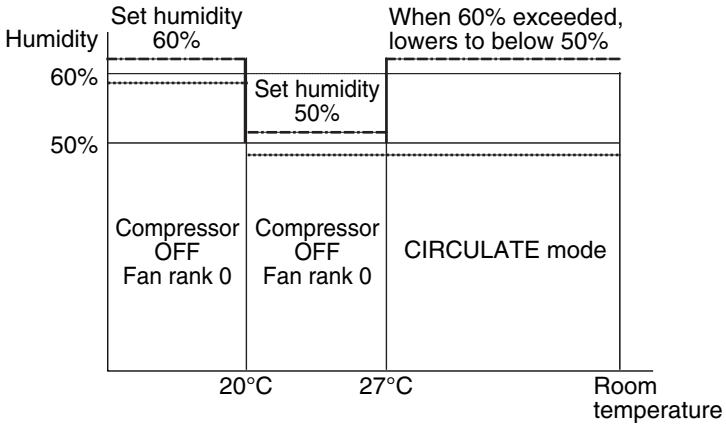
<table>
<tr><td colspan="2" rowspan="4">Current humidity
– Set humidity</td><td>Temperature</td><td>←20°C</td><td>22°C →
←27°C</td><td colspan="2">29°C →
←34°C</td><td colspan="2">36°C →</td></tr>
<tr><td>Temperature table</td><td>0</td><td>1</td><td colspan="2">2</td><td colspan="2">3</td></tr>
<tr><td>Set humidity</td><td>60%</td><td>50%</td><td>60%</td><td>50%</td><td>60%</td><td>50%</td></tr>
<tr><td>Dehumidification</td><td>Dehumidifier mode</td><td>Dehumidifier mode</td><td>Circulate</td><td>Dehumidifier mode</td><td>Circulate</td><td>Dehumidifier mode</td></tr>
<tr><td rowspan="2"></td><td rowspan="2">↑</td><td>Fan rank</td><td>Rank 3</td><td>Rank 3</td><td rowspan="2">To Dehumidifier mode</td><td>Rank 3</td><td rowspan="2">To Dehumidifier mode</td><td>Rank 5</td></tr>
<tr><td>Compressor</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr>
<tr><td rowspan="2">↓</td><td rowspan="2">+5%</td><td>Fan rank</td><td>Rank 1</td><td>Rank 1</td><td>Rank 2</td><td>Rank 5</td></tr>
<tr><td>Compressor</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr>
<tr><td rowspan="2">+3%
↓</td><td rowspan="2">↑
+1%</td><td>Fan rank</td><td>Rank 0</td><td>Rank 0</td><td>Rank 4</td><td>To Circulate mode</td><td>Rank 5</td><td>To Circulate mode</td></tr>
<tr><td>Compressor</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr>
<tr><td rowspan="2">–1%
↓</td><td rowspan="2">↑</td><td colspan="9"></td></tr>
</table>

1. Controls
   (a) Adjusts humidity according to room temperature for increased comfort.
   (b) CIRCULATION mode is activated when the temperature is high and the humidity is low. This mode keeps the compressor off.

Target part	Compressor	Airflow fan	Solenoid valve	Louvre
Operation	ON/OFF	Rank control	OFF	ON/OFF

   (c) Switches temperature table every 60 seconds to prevent the blower from turning on and off at the 3-minute restart for the coloured section in the chart above. (51% – 59%)
   (d) When the room temperature is above 29°C (temperature rising) or 27°C (temperature decreasing), CIRCULATE mode operates with the humidity below 50%.
   (e) The unit activates the dehumidifier when the humidity rises above 60%, and returns to CIRCULATE mode when the humidity drops below 50%.





2. Easy DEHUMIDIFYING mode is disabled in the following cases.
   (a) The MODE button is used to activate the previously set mode (EASY DEHUMIDIFYING, HIGH, LOW, AUTO, MILDEW GUARD, LOW TEMP).
   (b) The selection button is used to activate LAUNDRY mode.
   (c) The air purifier button is used to activate AIR PURIFIER mode.

⑥ Drying inside

1. Controls
   (a) Prevents the growth of mildew by drying the moisture accumulated on the heat exchanger when the dehumidifier is OFF.
   (b) Drying inside operation does not depend on having a full water level.
   (c) The following operations are performed during drying inside operation.

Target part	Compressor	Airflow fan	Solenoid valve	Louvre
Operation	ON/OFF	Rank control	OFF	Stops at 90°

2. Start conditions for drying inside operations
   (a) Automatic drying inside mode - This mode starts when the Drying inside button is set to ON, and any of the following conditions are met.
      • The Power button is turned OFF.
      • The OFF timer time is reached.
      • The LAUNDRY mode completes operations.
   (b) Manual drying inside mode - This mode starts when the Drying inside button is operated while the following condition is met.
      • The Power button is turned OFF.

3. Operating details
   (a) The following indications are displayed during DRYING INSIDE operation
      • LED indicator: Only mildew guard elite lamp flashes, others off
      • LCD panel: All off
   (b) Drying inside operates according to the following steps
      • Step 1: Moisture is allowed to drip from the heat exchanger. The louvre is positioned upwards at 90˚.
      • Step 2: Moisture on the heat exchanger is dried with air.
      • Step 3: Moisture on the heat exchanger is dried with heat.
      • Step 4: The heat exchanger is cooled if the temperature rises too high.
      • Step 5: Internal humidity is discharged in Step 4, and the louvre moves to the closed position.
   (c) Step 3 does not perform the tube temperature or room temperature check that accompanies a microprocessor reset, and jumps directly to Step 5.
   (d) Mechanisms operated in the above steps (* are deemed E^2PROM data.)

Step	Fan	Compressor	Solenoid valve	Conditions for moving to next step
Step 1	Rank 1	OFF	OFF	Operates for 5 min.
Step 2	Rank 3	OFF	OFF	Operates for *25 min.
Step 3	Rank 0	ON	ON	Moves to Step 5 when tube temperature is above 45˚C * or unit operates for MAX 20 min.
Step 4	Rank 0	OFF	OFF	Operates for 20 min including time for Step 3. *
Step 5	Rank 1	OFF	OFF	Drying inside stops after operating for 10 min.

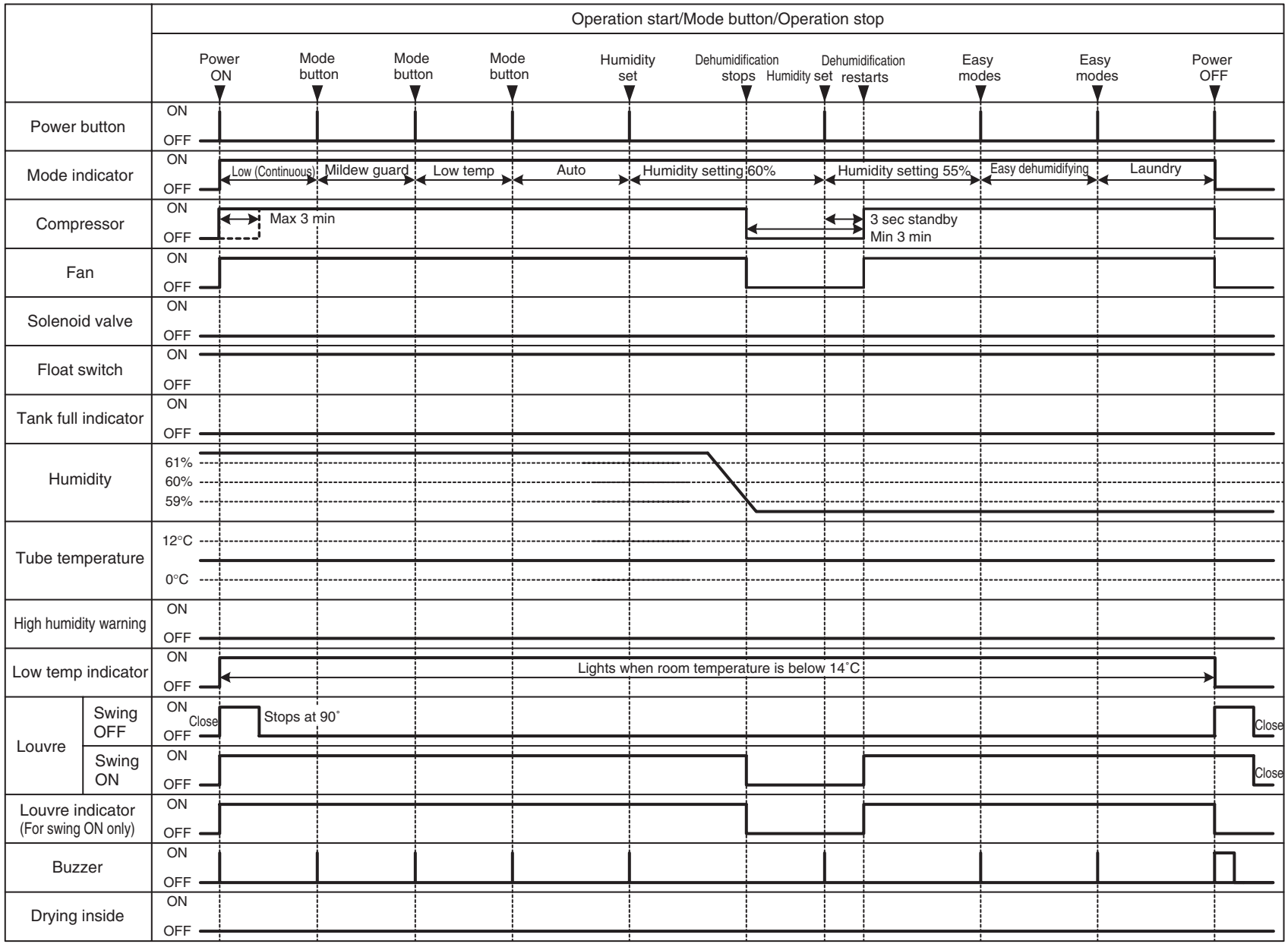
   (e) Drying inside operation does not stop even if tank full is detected.

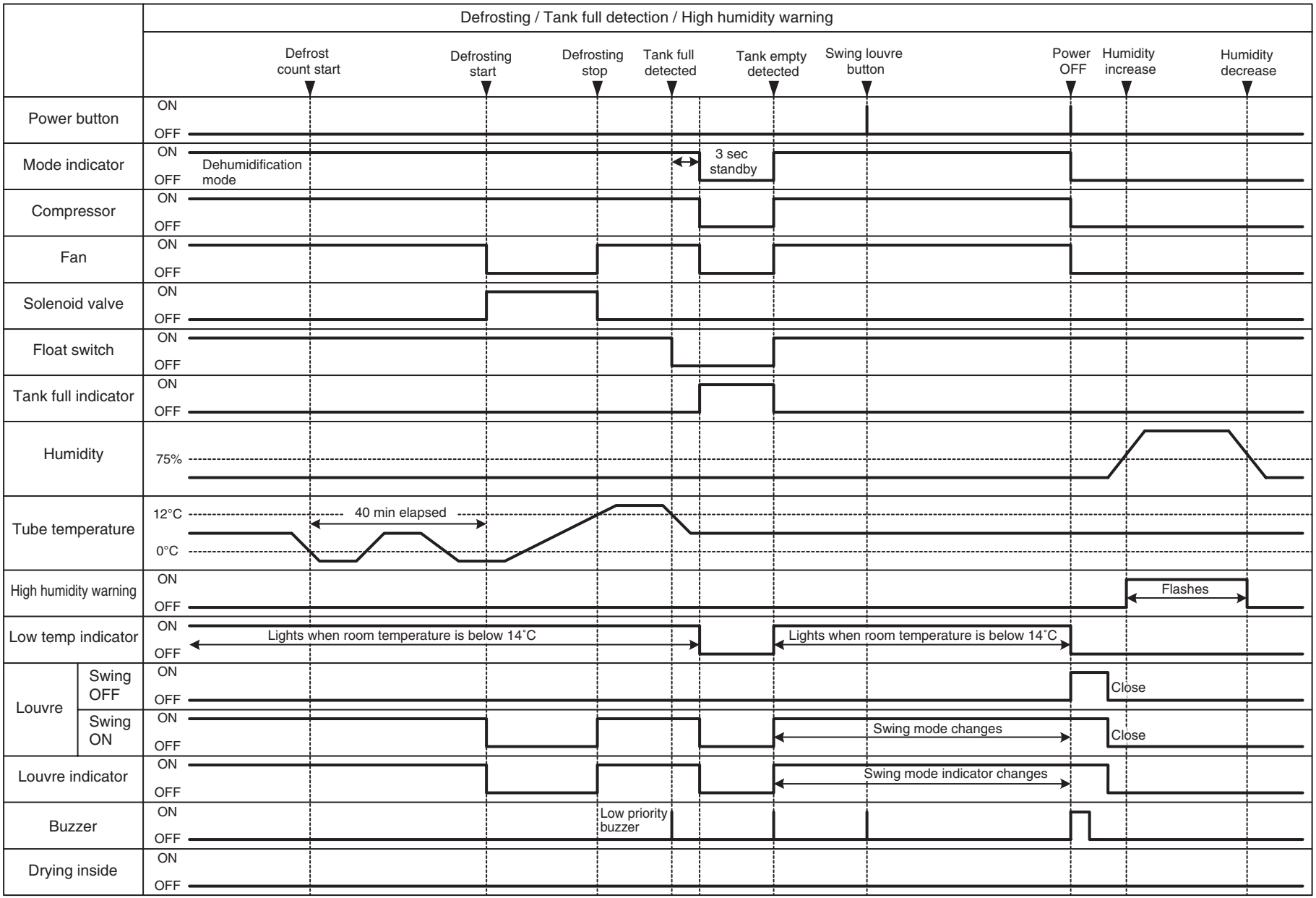
4. Conditions for drying inside operation to end
   (a) Upon completion of step 5 above.
   (b) The following buttons terminate drying inside operation (during steps 1 to 5 above) when pressed.
      • Power button
      • Drying inside button
      • ON timer button
   (c) The following operations are performed when drying inside ends.

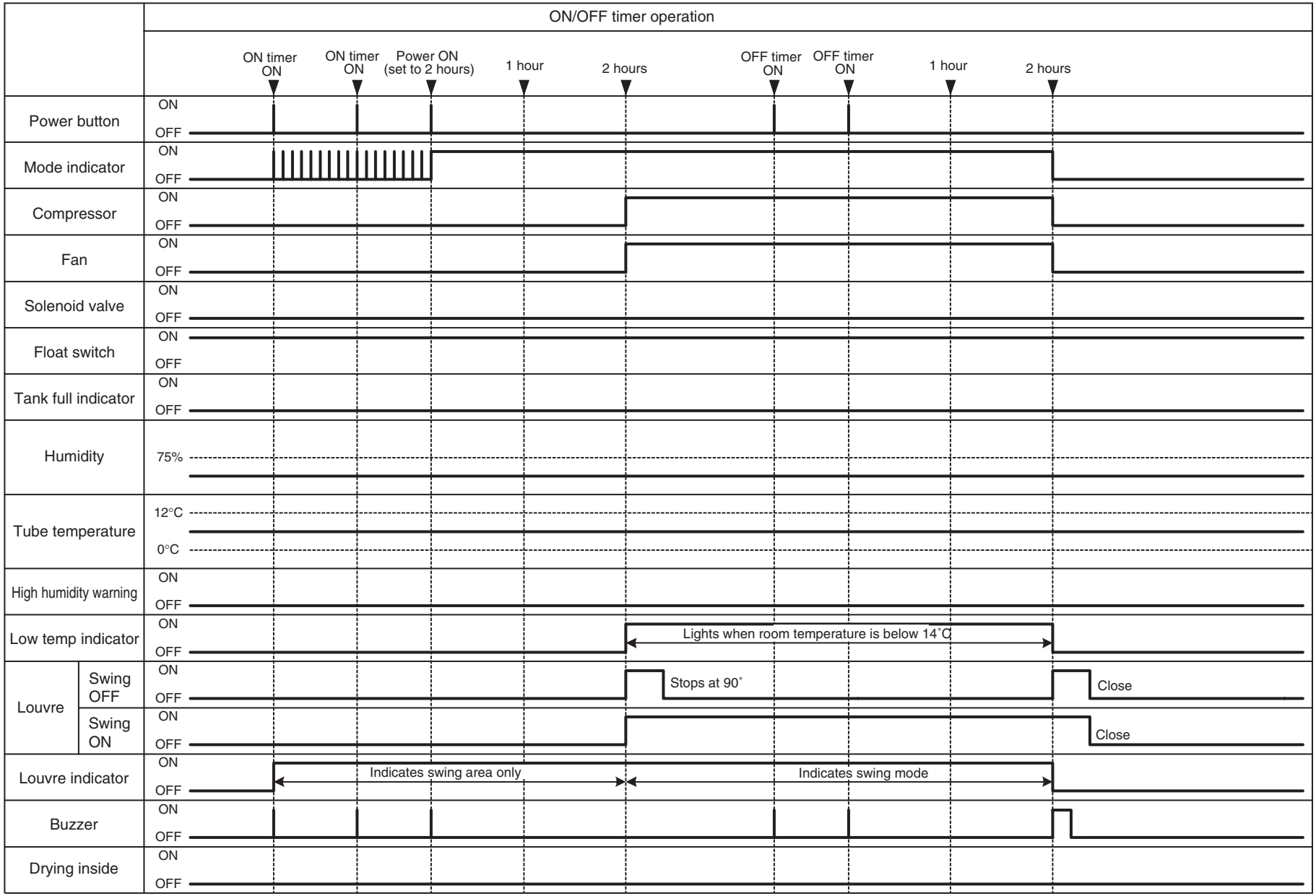
Target part	Compressor	Airflow fan	Solenoid valve	Louvre
Operation	OFF	Rank 0	OFF	Closed

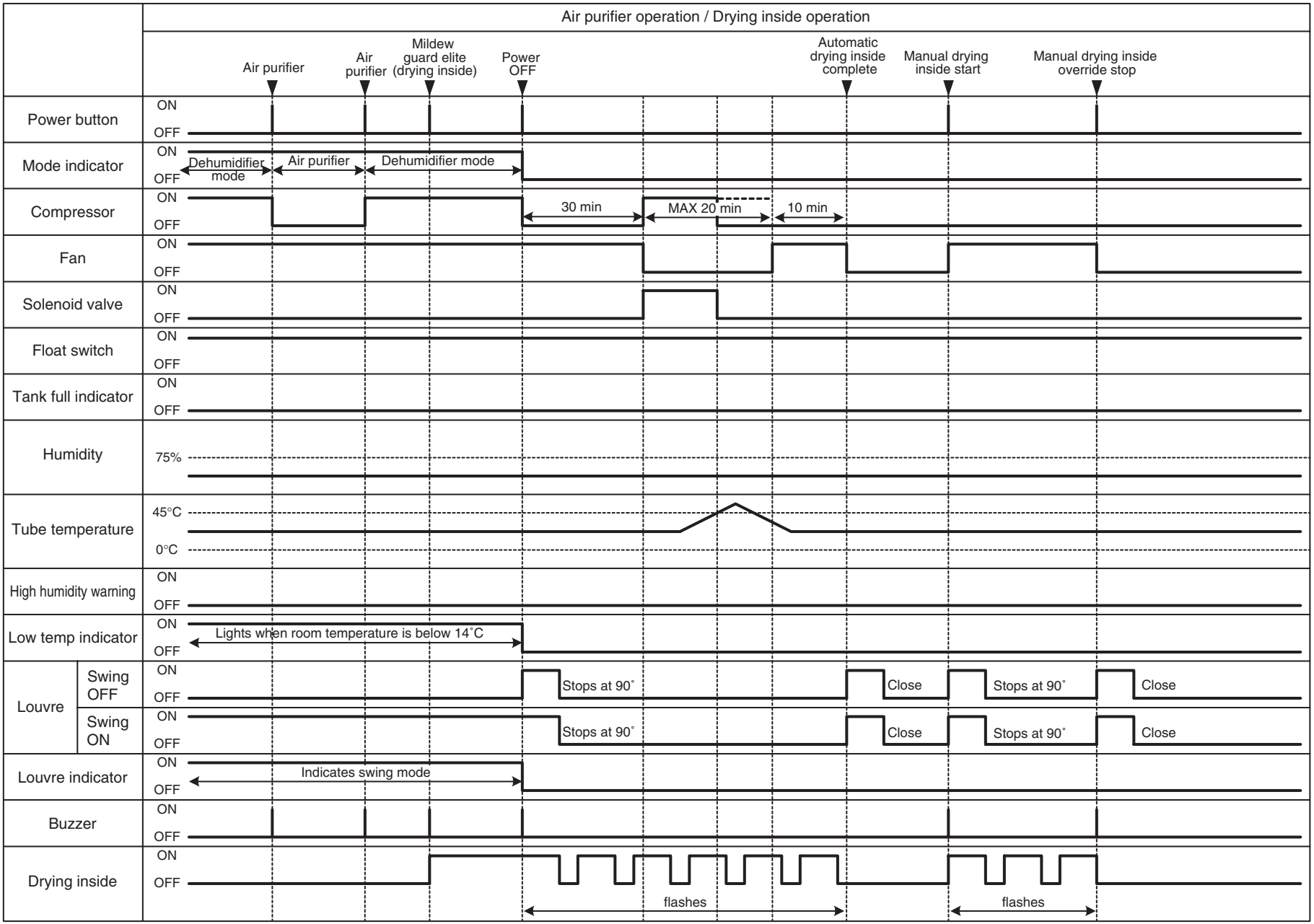
5. Drying inside operation is not performed under the following conditions.
   (a) The power is ON.
   (b) The ON timer is operating.
   (c) An error is detected during self-diagnosis.

7.3. Timing Charts

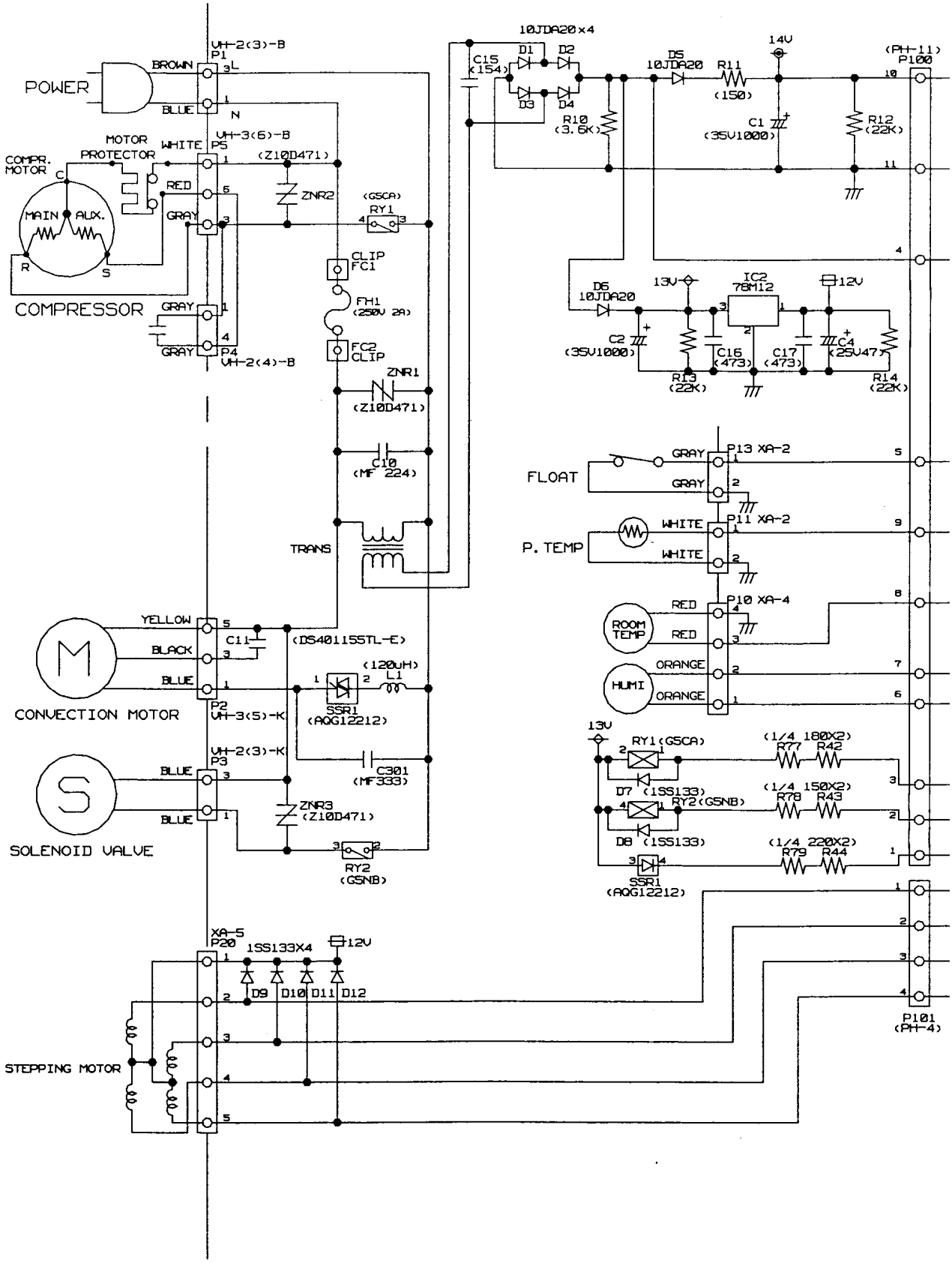


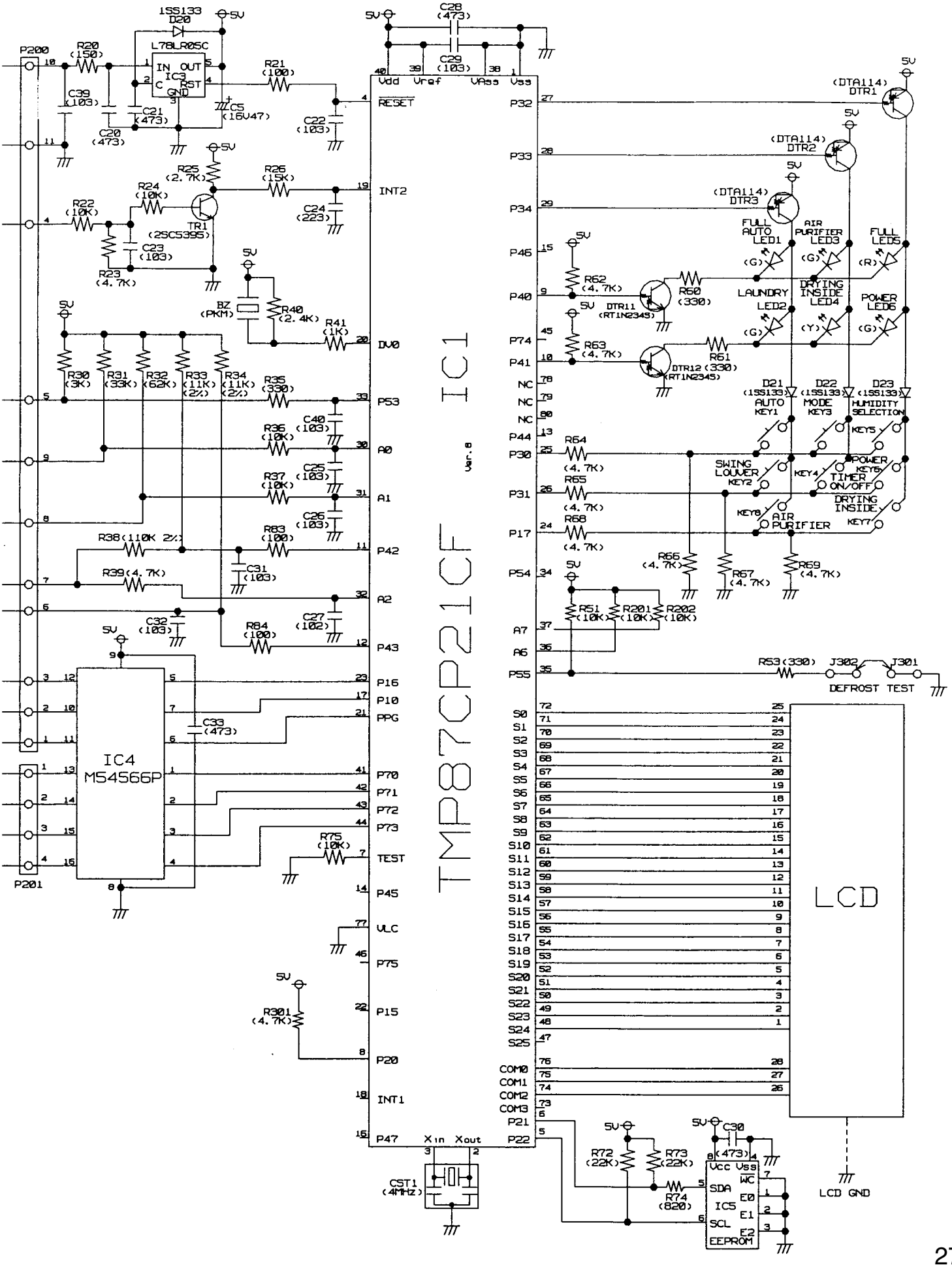

Defrosting / Tank full detection / High humidity warning
Defrost count start
Defrosting start
Defrosting stop
Tank full detected
Tank empty detected
Swing louvre button
Power OFF
Humidity increase
Humidity decrease
Power button
Mode indicator
Dehumidification mode
3 sec standby
Compressor
Fan
Solenoid valve
Float switch
Tank full indicator
Humidity
75%
Tube temperature
12°C
0°C
40 min elapsed
High humidity warning
Flashes
Low temp indicator
Lights when room temperature is below 14˚C
Lights when room temperature is below 14˚C
Louvre
Swing OFF
Swing ON
Close
Swing mode changes
Close
Louvre indicator
Swing mode indicator changes
Buzzer
Low priority buzzer
Drying inside
ON
OFF


ON/OFF timer operation
ON timer ON
ON timer ON
Power ON (set to 2 hours)
1 hour
2 hours
OFF timer ON
OFF timer ON
1 hour
2 hours
Power button
Mode indicator
Compressor
Fan
Solenoid valve
Float switch
Tank full indicator
Humidity
75%
Tube temperature
12°C
0°C
High humidity warning
Low temp indicator
Lights when room temperature is below 14˚C
Louvre
Swing OFF
Stops at 90˚
Close
Swing ON
Close
Louvre indicator
Indicates swing area only
Indicates swing mode
Buzzer
Drying inside
ON
OFF


Air purifier operation / Drying inside operation
Air purifier
Air purifier
Mildew guard elite (drying inside)
Power OFF
Automatic drying inside complete
Manual drying inside start
Manual drying inside override stop
Power button
Mode indicator
Dehumidifier mode
Air purifier
Dehumidifier mode
Compressor
30 min
MAX 20 min
10 min
Fan
Solenoid valve
Float switch
Tank full indicator
Humidity
75%
Tube temperature
45°C
0°C
High humidity warning
Low temp indicator
Lights when room temperature is below 14˚C
Louvre
Swing OFF
Swing ON
Stops at 90˚
Close
Louvre indicator
Indicates swing mode
Buzzer
Drying inside
flashes
ON
OFF

7.4 General Block Diagram

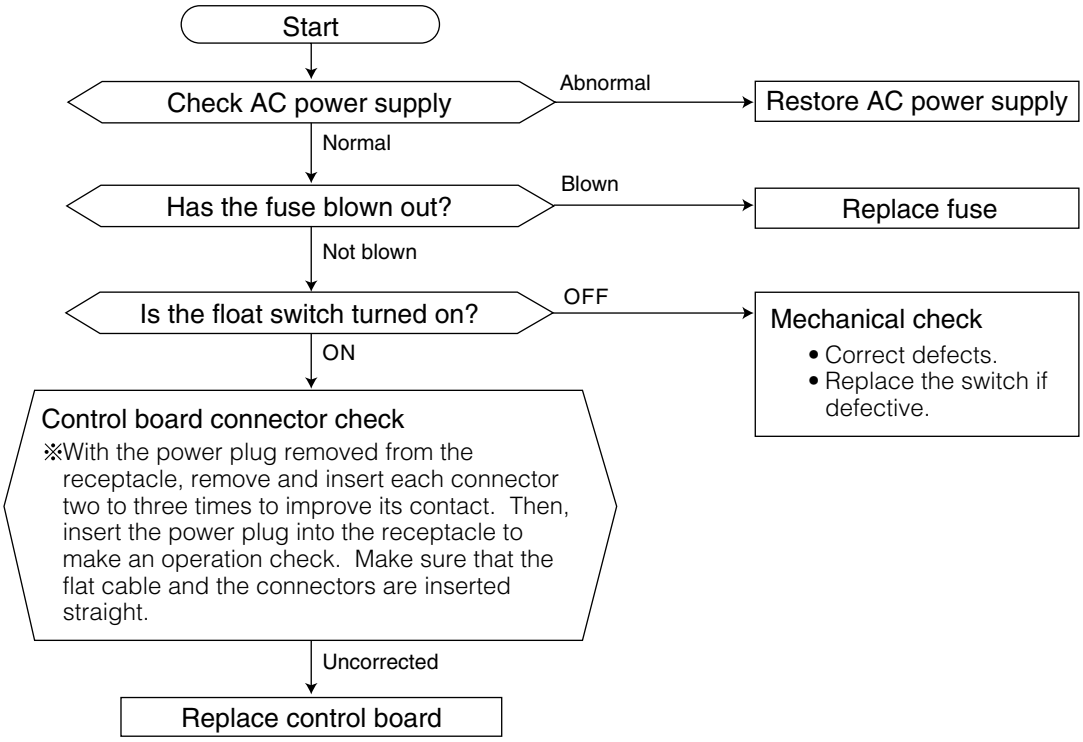



TMP87CP21CF IC1
Ver.B
IC4
M54566P
LCD
LCD GND
DEFROST TEST
P200
P201
L78LR05C
1SS133
(DTA114)
DTR1
DTR2
DTR3
DTR11
DTR12
(RT1N2345)
TR1
(2SC5395)
AIR PURIFIER LED1
AIR PURIFIER LED3
FULL LED5
LAUNDRY LED2
DRYING INSIDE LED4
POWER LED6
AUTO KEY1
MODE KEY3
HUMIDITY SELECTION KEY5
SWING LOUVER KEY2
TIMER ON/OFF KEY4
POWER KEY6
AIR PURIFIER KEY8
DRYING INSIDE KEY7
CST1 (4MHz)
EEPROM
SDA
SCL
RESET
TEST
Xin
Xout
Vdd
Vss
Vref
VAss

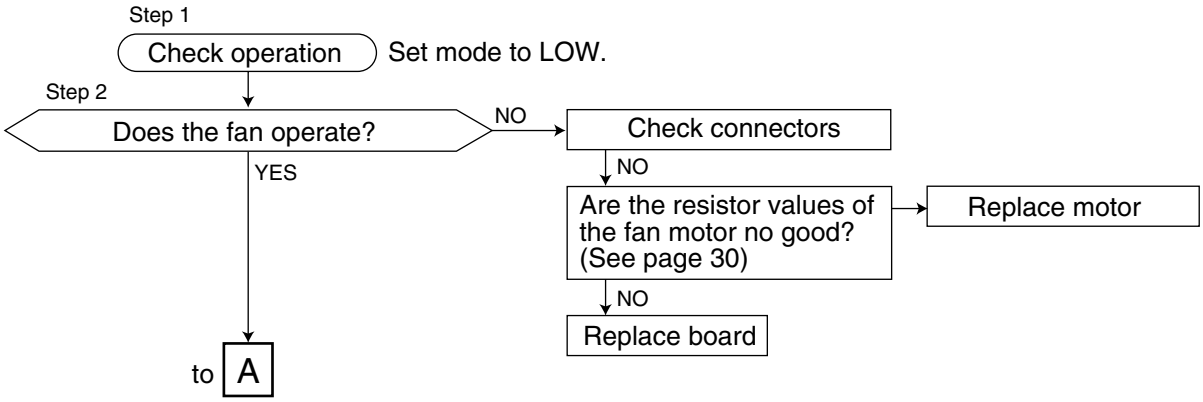
8. Troubleshooting Procedure

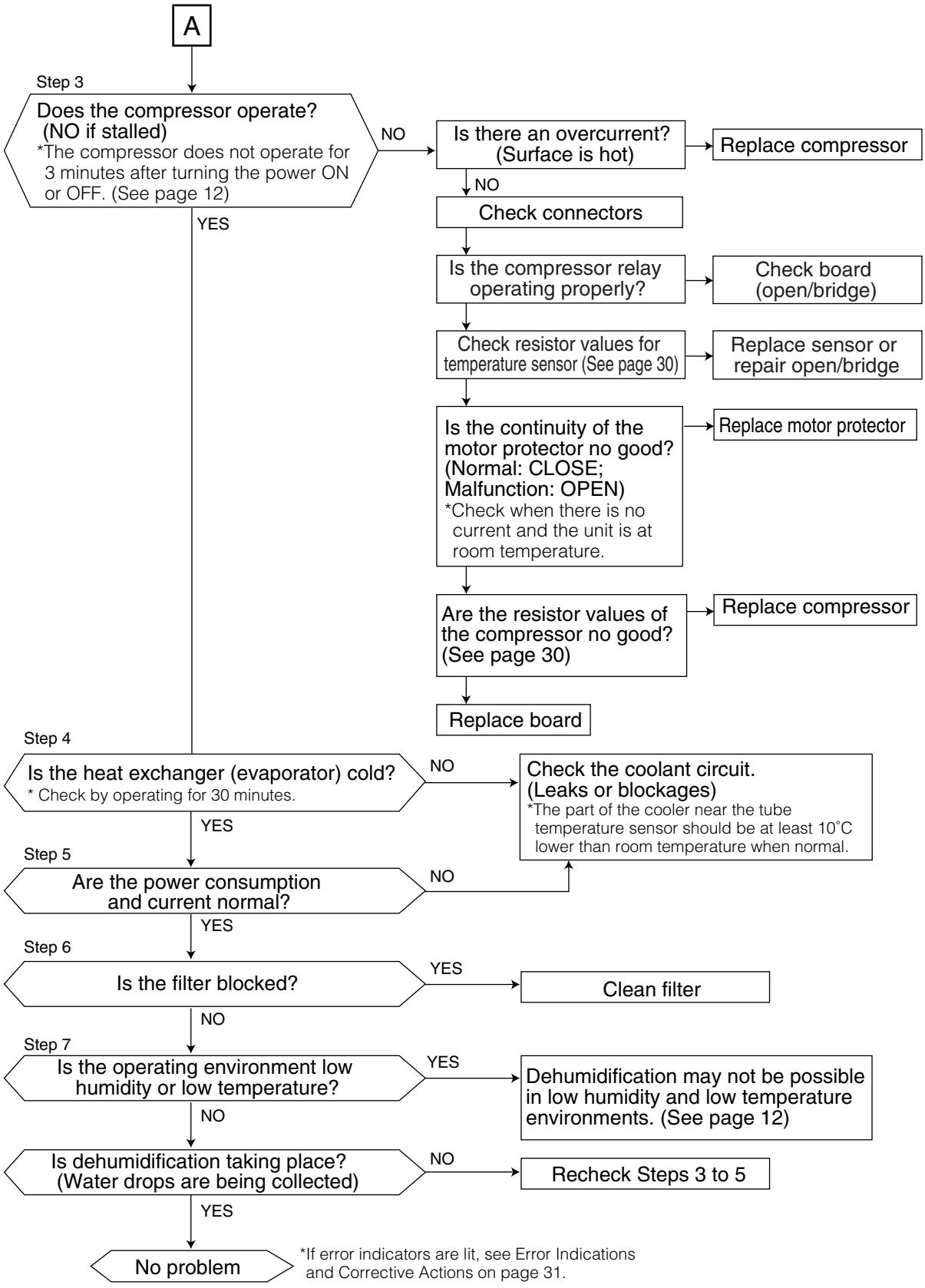
8.1 Troubleshooting flowchart

The unit does not operate


Start
Check AC power supply
Abnormal
Restore AC power supply
Normal
Has the fuse blown out?
Blown
Replace fuse
Not blown
Is the float switch turned on?
OFF
Mechanical check
• Correct defects.
• Replace the switch if defective.
ON
Control board connector check
※With the power plug removed from the receptacle, remove and insert each connector two to three times to improve its contact. Then, insert the power plug into the receptacle to make an operation check. Make sure that the flat cable and the connectors are inserted straight.
Uncorrected
Replace control board

Dehumidifier doesn't operate at all




A
Step 3
Does the compressor operate? (NO if stalled)
*The compressor does not operate for 3 minutes after turning the power ON or OFF. (See page 12)
NO
Is there an overcurrent? (Surface is hot)
Replace compressor
NO
Check connectors
YES
Is the compressor relay operating properly?
Check board (open/bridge)
Check resistor values for temperature sensor (See page 30)
Replace sensor or repair open/bridge
Is the continuity of the motor protector no good? (Normal: CLOSE; Malfunction: OPEN)
*Check when there is no current and the unit is at room temperature.
Replace motor protector
Are the resistor values of the compressor no good? (See page 30)
Replace compressor
Replace board
Step 4
Is the heat exchanger (evaporator) cold?
* Check by operating for 30 minutes.
NO
Check the coolant circuit. (Leaks or blockages)
*The part of the cooler near the tube temperature sensor should be at least 10˚C lower than room temperature when normal.
YES
Step 5
Are the power consumption and current normal?
NO
YES
Step 6
Is the filter blocked?
YES
Clean filter
NO
Step 7
Is the operating environment low humidity or low temperature?
YES
Dehumidification may not be possible in low humidity and low temperature environments. (See page 12)
NO
Is dehumidification taking place? (Water drops are being collected)
NO
Recheck Steps 3 to 5
YES
No problem
*If error indicators are lit, see Error Indications and Corrective Actions on page 31.

* If the customer complains that the unit won't dehumidify, make the following checks before starting to repair the coolant circuit:

① Clogged filter, or dust: → Action: Clean.

② Low-temperature, low-humidity operating environment:

→ Action: See the explanation of the graph on page 13, or move the unit to a kitchen or bathroom and request verification of its performance.

③ Request checking whether the unit is in an automatically-stopping operation mode such as "AUTO" or "EASY DEHUMIDIFYING", etc.

→ Action: Verify to dehumidify in "LOW" operation mode. (See pages 6 – 8.)

8.2 Key Component Check Procedures

<table>
<tr><th>Component name</th><th>Testing procedure</th></tr>
<tr><td>Tub temperature sensing thermistor
P11</td><td>Detach the connector and measure the resistance using a multimeter
(component temperature: 10°C to 30°C).
<table>
<tr><th>Normal</th><th>Abnormal</th></tr>
<tr><td>Between P11 pins: 8.0kΩ to 20.8kΩ</td><td>Open or shorted</td></tr>
</table></td></tr>
<tr><td>Room temperature and humidity sensor board</td><td>Detach the connector and measure the resistance using a multimeter
(component temperature: 10°C to 30°C).
Normal: 47 to 51kΩ (between P10 pins 3 and 4)
Abnormal: Open or shorted</td></tr>
<tr><td>Compressor</td><td>With the connector detached, measure the resistance across the terminals using a multimeter
(winding temperature: 10°C to 30°C).
<table>
<tr><th></th><th>Normal</th><th>Abnormal</th></tr>
<tr><td>C-R side</td><td>25.0Ω ~ 27.1Ω</td><td rowspan="2">Open or shorted</td></tr>
<tr><td>C-S side</td><td>67.9Ω ~ 73.5Ω</td></tr>
</table></td></tr>
<tr><td>Fan motor</td><td>Measure the resistance between terminals using a multimeter
(winding temperature: 10°C to 30°C).
<table>
<tr><th></th><th>Normal</th><th>Abnormal</th></tr>
<tr><td>Yellow-Blue</td><td>258Ω ~ 280Ω</td><td rowspan="2">Open or shorted</td></tr>
<tr><td>Black-Blue</td><td>379Ω ~ 411Ω</td></tr>
</table></td></tr>
<tr><td>Solenoid valve coil</td><td>Measure the resistance between terminals using a multimeter
(component temperature: 10°C to 30°C).
<table>
<tr><th>Normal</th><th>Abnormal</th></tr>
<tr><td>2.6kΩ ~ 2.9kΩ</td><td>Open or shorted</td></tr>
</table></td></tr>
<tr><td>Stepping motor</td><td>Measure the resistance across terminals with a multimeter.
(Part temperature: approx 25°C)
<table>
<tr><th></th><th>Normal</th><th>Abnormal</th></tr>
<tr><td>Terminals 1-2</td><td rowspan="4">342Ω ~ 418Ω</td><td rowspan="4">Open or shorted</td></tr>
<tr><td>Terminals 1-3</td></tr>
<tr><td>Terminals 1-4</td></tr>
<tr><td>Terminals 1-5</td></tr>
</table></td></tr>
</table>

8.3 Error Indications and Corrective Actions

Indication (Timer display)	Error (failure)	Corrective action
E0	P10 connector out of position Room temperature thermistor blowout	Check the P10 connection. Check the room temperature and humidity sensor board.
E1	Room temperature thermistor short Room temperature and humidity sensor board failure	
E7	P11 connector out of position Tube temperature thermistor blowout	Check the P11 connection. Check the tube temperature thermistor.
E8	Tube temperature thermistor short Tube temperature sensor failure	
A1	Microprocessor failure RAM error	Replace the main board.
A2	Frequency determination error (When power is on)	Outlet/power check (Replace the main and power supply boards.)
A3	Frequency determination error (During operation)	
A6	Watchdog timer error	Replace the main board.
P4	Compressor	Check blowing performance. Check the tube temperature thermistor. Check the compressor operating noise.

8.4 Self-Test Program and Execution Procedure

(1) Deactivating 3-minute restart prevent lock

●Start: Press the MODE and HUMIDITY SELECTION buttons together 3 times when the power is off. Press the POWER button within 2 seconds.

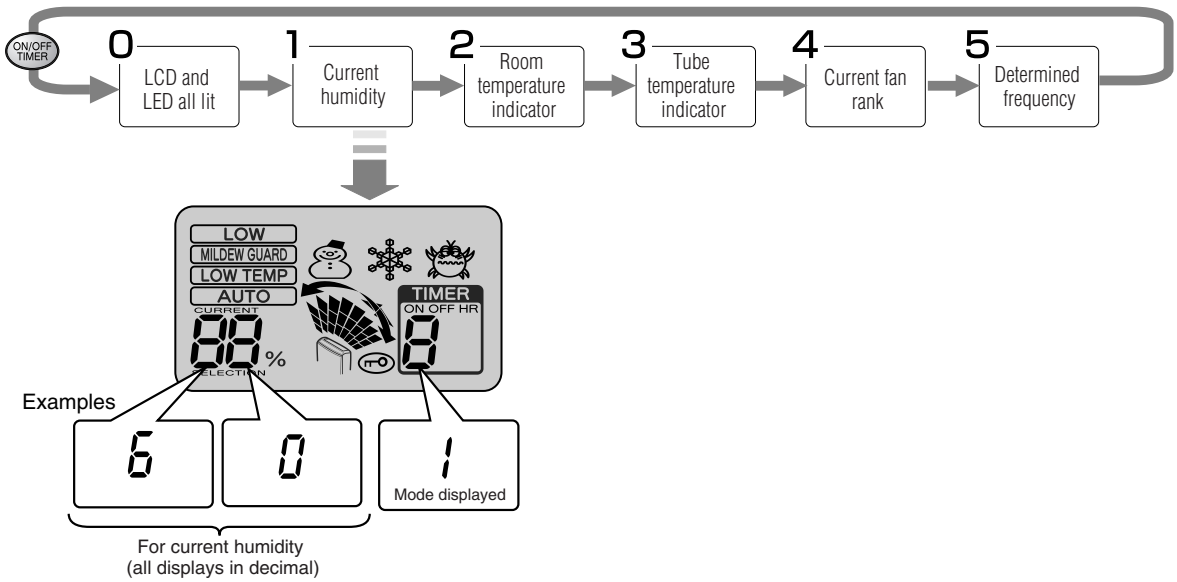
●Functions:

① Deactivates 3-minute restart prevention lock (immediate operation)
② Fan: Fix at rank 6 (max. airflow)
③ Activates compressor
④ Operating mode: Low Temp
⑤ Low temperature is indicated on LCD.
⑥ When E^2PROM error is detected, water full, drying inside, air purifying and LED are lit.

●To end: Turn power off. The solenoid valve functions for 3 seconds.

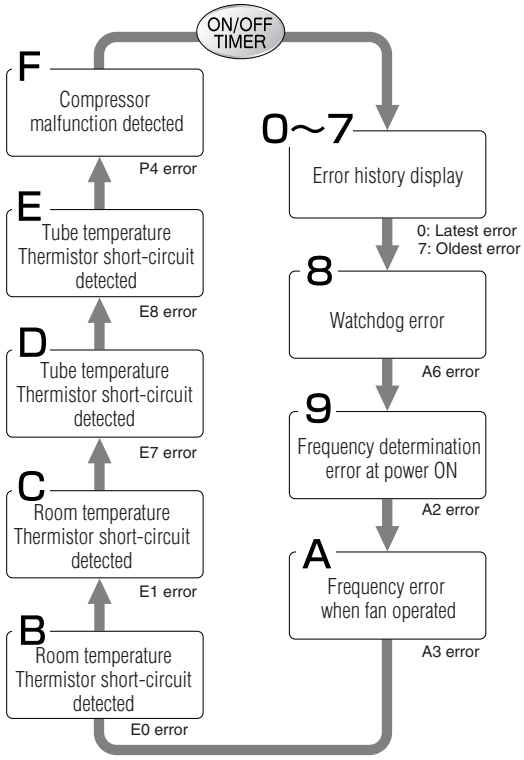
(2) LED, LCD and fan tests

●Start: Press the MODE and HUMIDITY SELECTION buttons simultameously 4 times when the power is off. Press the POWER button within 2 seconds.
●Mode select: Use the timer switch to change the diagnosis mode (0 - 5).
●Finish: Turn the power OFF. The solenoid valves operate for approximately 3 seconds.

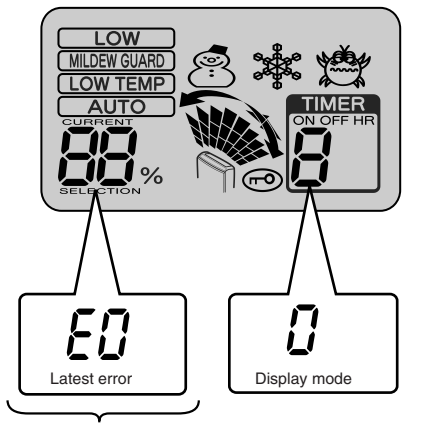


(3) Operation/Error history mode

●Start: Press the MODE and HUMIDITY SELECTION buttons simultameously 5 times when the power is off. Press the POWER button within 2 seconds.
●Mode select: Use the Timer button to select indicator mode (0-F).
●Finish: Turn the power OFF. The solenoid valves operate for approximately 3 seconds.



Example: Latest error display



When “display mode” is 8 to F, the number of error generations is displayed in hexadecimal.

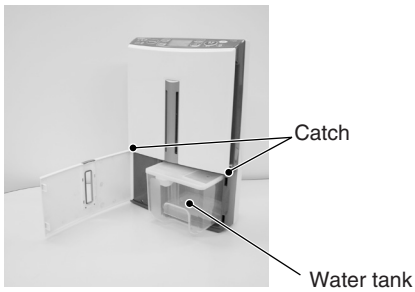
(4) Demo program

●Start: With the power OFF, hold down the MODE and SELECTION buttons, and press the power button. The demo program starts in 3 seconds.
●Operations (all buttons are disabled):
① Fan: Fixed at rank 3
② Compressor/solenoid valve: Stopped
③ LCD/LED: Lights in random sequence
④ Swing louvre: Wide
●End: Remove power plug.

9. Disassembly and Reassembly Hints

9.1 Disassembly Procedures

Picture 1



1. Remove the water tank

(Pic. 1)

2. Removing the front panel, and air filter assembly

Step 1) Push the front panel downward, and pull toward you (to release the catch on the bottom). Push up to remove. (Fig. 1)

Step 2) Press the air filter assembly tab, pull the air filter toward you, and remove. (Fig. 2)

Figure 1

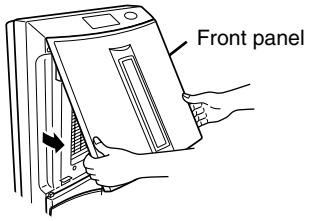
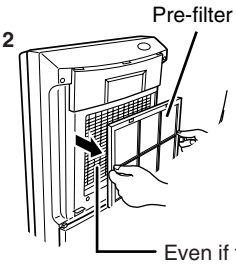


Figure 2



Even if the metal fins on the inside of the unit become bent, this does not affect performance.

3. Removing the front casing assembly

Step 1) Remove the water tank and front panel following the steps for sections 1 and 2 above.

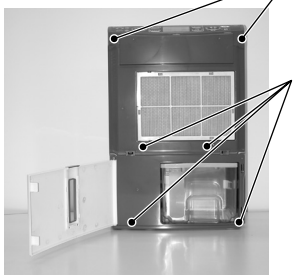
Step 2) Remove front casing set screws (two 4x14, four 4x12). (Pic. 2)

Step 3) Pull the front casing assembly toward you so that it is away from the main unit. (Pic. 3)

Step 4) Pull the power board box toward you, detach the catches on the box lid (one on each side), and remove the lid. (Pic. 4)

Step 5) Remove connectors P100 and P101 (connectors for main board connection cable) from the power board. Disassemble the front casing assembly. (Pic. 5)

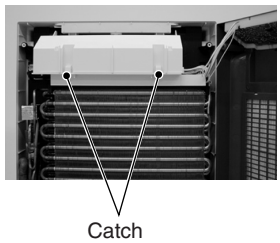
Picture 2



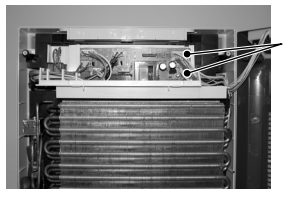
Repairable parts	Control board Power board Tube temperature sensor

Picture 3

Picture 4



Picture 5

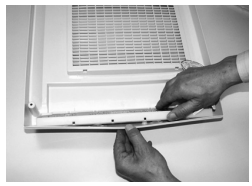


[To remove the control board]

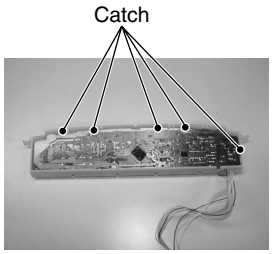
Step 1) Pull the front casing/switch operation part toward the outside, release the catch (protrusion) on the switch button on the main board cover side, and remove the main board cover assembly. (Pic. 6)

Step 2) Release the main board catches (4 below, 1 on the right), and remove the main board. (Pics. 7, 8)

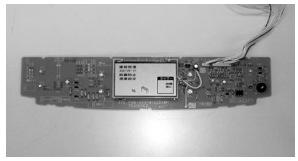
Picture 6



Picture 7



Picture 8



4. Removing the rear casing

Step 1) Remove the water tank, front panel, and front casing assembly following the steps for sections 1 to 3 above.

Step 2) Remove the rear casing setscrews (6). (Pic. 9)

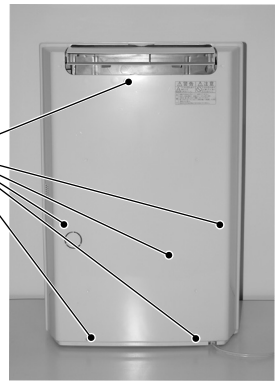
Step 3) Push the rear casing downward, and pull outward to detach the catches on the bottom. Lift the rear casing and raise the handle. Detach the catches that prevent the handle from coming loose, and remove the handle. (Pic. 10)

Step 4) Pull the top part of the rear casing outward, and detach the catches (one on each side) that interlock the screw stop boss and the guide on the side of the fan assembly. (Pic. 10)

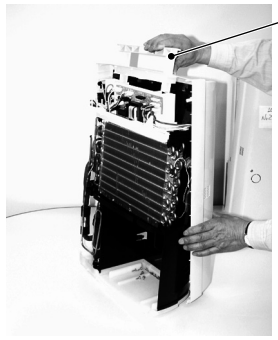
Step 5) Lift the rear casing upward, and remove from under the louvre. (Pics. 11, 12)

Step 6) Remove the louvre net.

Picture 9

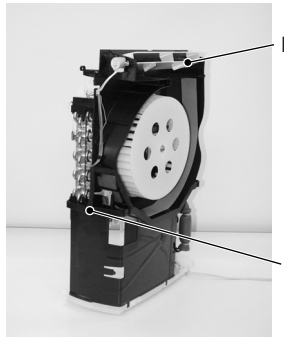


Picture 10

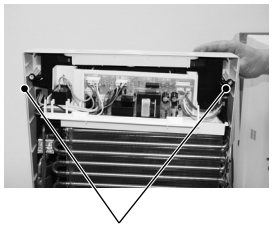


Repairable parts	Fan Temperature/humidity sensor Solenoid valve Float switch Thermal over current switch

Picture 12



Picture 11

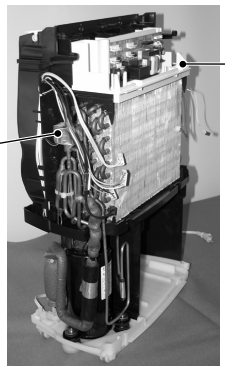


Catches (one on each side)

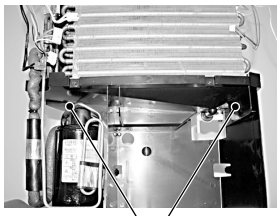
5. To remove the fan assembly

Step 1) Remove the water tank, front panel, air filter assembly, front casing assembly, main board, and rear casing following the steps for sections 1 to 4 above.
Step 2) Remove the condenser and connectors (9) from the power board.
Step 3) Remove the lead wires from both sides of the fan guide casing.
Step 4 Remove the power board box assembly. (Pic. 13)
Step 5) Detach the catches (one on each side) that interlock the fan assembly and the drain pan by leaning the top of the fan assembly toward the heat exchanger and pulling upward. Remove the fan assembly.
(Pics. 14, 15)

Picture 13



Picture 14

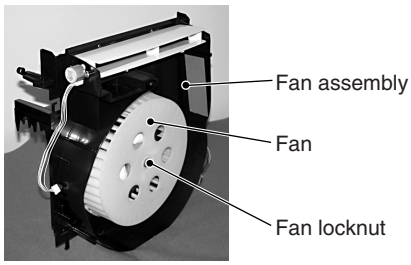


Repairable parts	Fan Fan motor Float switch Heat exchanger (radiator, refrigerator)

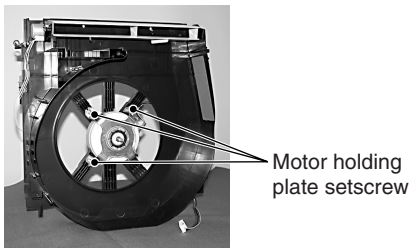
[To remove the fan motor]
Step 1) Remove the fan locknut and fan. (Pic. 15)
Step 2) Remove the tape securing the fan motor lead wire, and separate the lead wire from the fan guide casing. (Pic. 16)
Step 3) Remove the motor holding plate and setscrews (3). (Pic. 16)
Step 4) Remove the holding plate, fan motor, and fan motor cushion.

[To remove the float switch]
Remove the float switch attached to the drain pan. (Pic. 17)

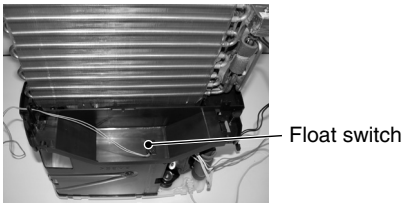
Picture 15



Picture 16



Picture 17



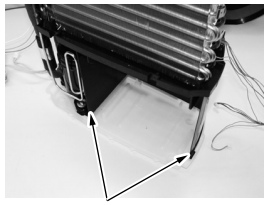
6. To remove the drain pan assembly

Step 1) Remove the water tank, front panel, front casing assembly, rear panel, and fan assembly following the steps for sections 1 to 5 above.

Step 2) Detach the catches interlocking the drain pan and the base, and remove the base while lifting the right side of the heat exchanger. (Pics. 18, 19)

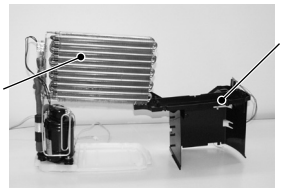
Repairable parts	Compressor

Picture 18



Catches for interlocking the drain pan and base

Picture 19



10. Continuous Water Drainage

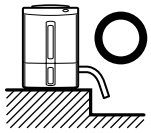
If a drain is available, the unit can continuously drain excess water by attaching a commercially available hose (internal diameter 15mm).
The unit can be operated for extensive periods without the need to empty the water tank.

Necessary items

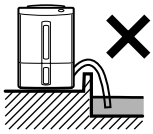
- **Commercially available hose (ID 15mm)**
  Long enough to reach the drain.
- **Pincers**

How to set up the drainage hose

Correctly installed



Incorrectly installed



- hose immersed in water
- hose raised to a level higher than the drainage outlet

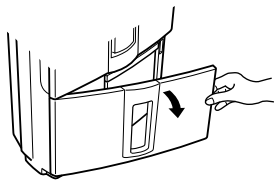
→ **The water will not drain.**

CAUTION

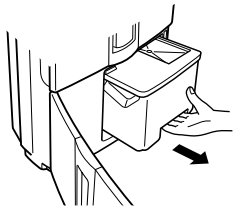
Do not drain water continuously if there is a possibility that temperatures around the hose could drop below freezing point.
Water inside the hose may freeze and water may leak from the unit and **damage surrounding objects**.

When draining water continuously or left unattended for long periods, inspect the unit once a fortnight.
Foreign objects, etc. could clog the hose **resulting in overheating and/or leakage**.

1 Remove the water tank.

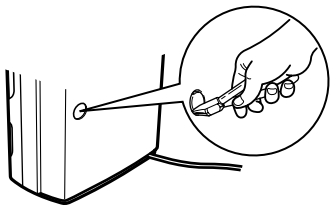


Open the front door.



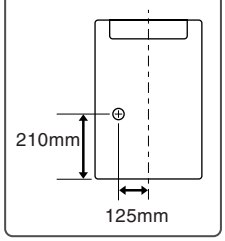
Grasp handle and pull out.

2 Open the drainage outlet.

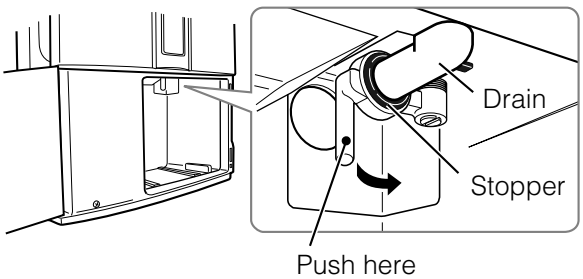


Use cutters to cut the three fixing ribs of the continuous drainage port on the back of the main unit, then remove it carefully making sure that it does not fall inside the unit.

Position of drainage outlet

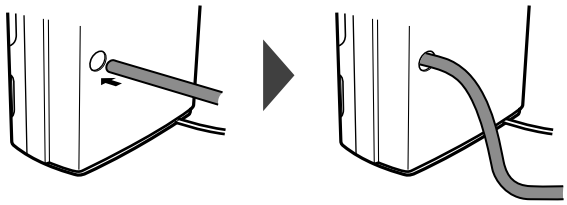


3 Press drain stopper.

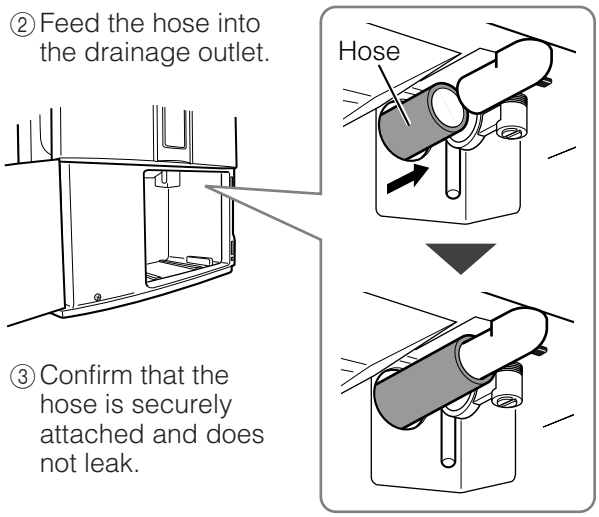


4 Insert the hose into the drainage outlet on the back.

① Feed the commercially available hose (ID 15 mm) into the drainage outlet while keeping the stopper pressed



② Feed the hose into the drainage outlet.



③ Confirm that the hose is securely attached and does not leak.

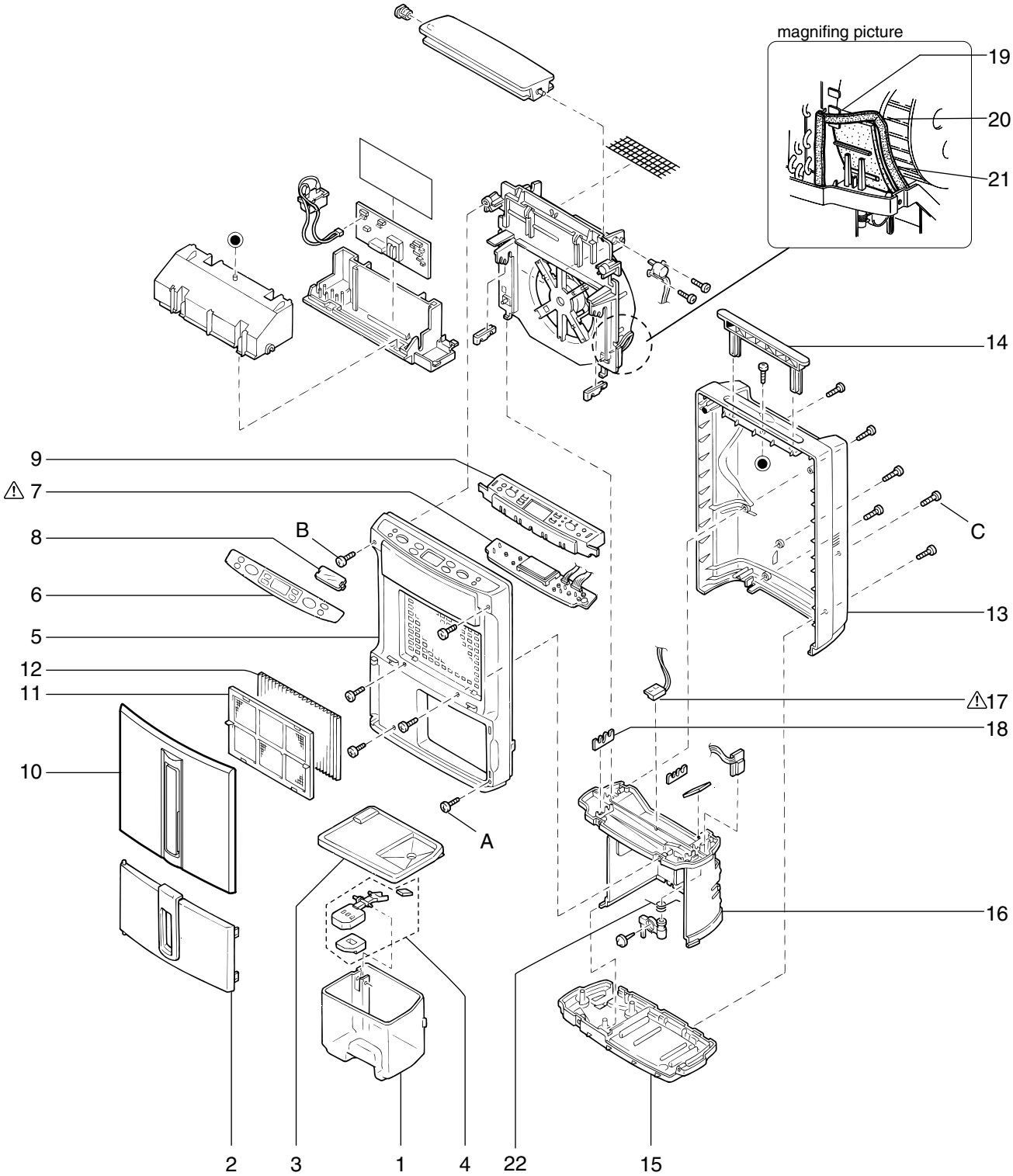
5 Replace the tank, and set the end of the hose in the drain.

The unit cannot operate without returning the tank.

Note

- Leave a minimum space of 20 cm behind the unit for attaching the hose.
- Confirm that the hose does not show signs of deterioration such as cracks and clogging.
- Inspect the hose every 2 weeks. Insects or dirt blocking the hose may cause leakage resulting in malfunctions.

Model MJ-E16VX-S1 Exploded View
<Casing and Structure>



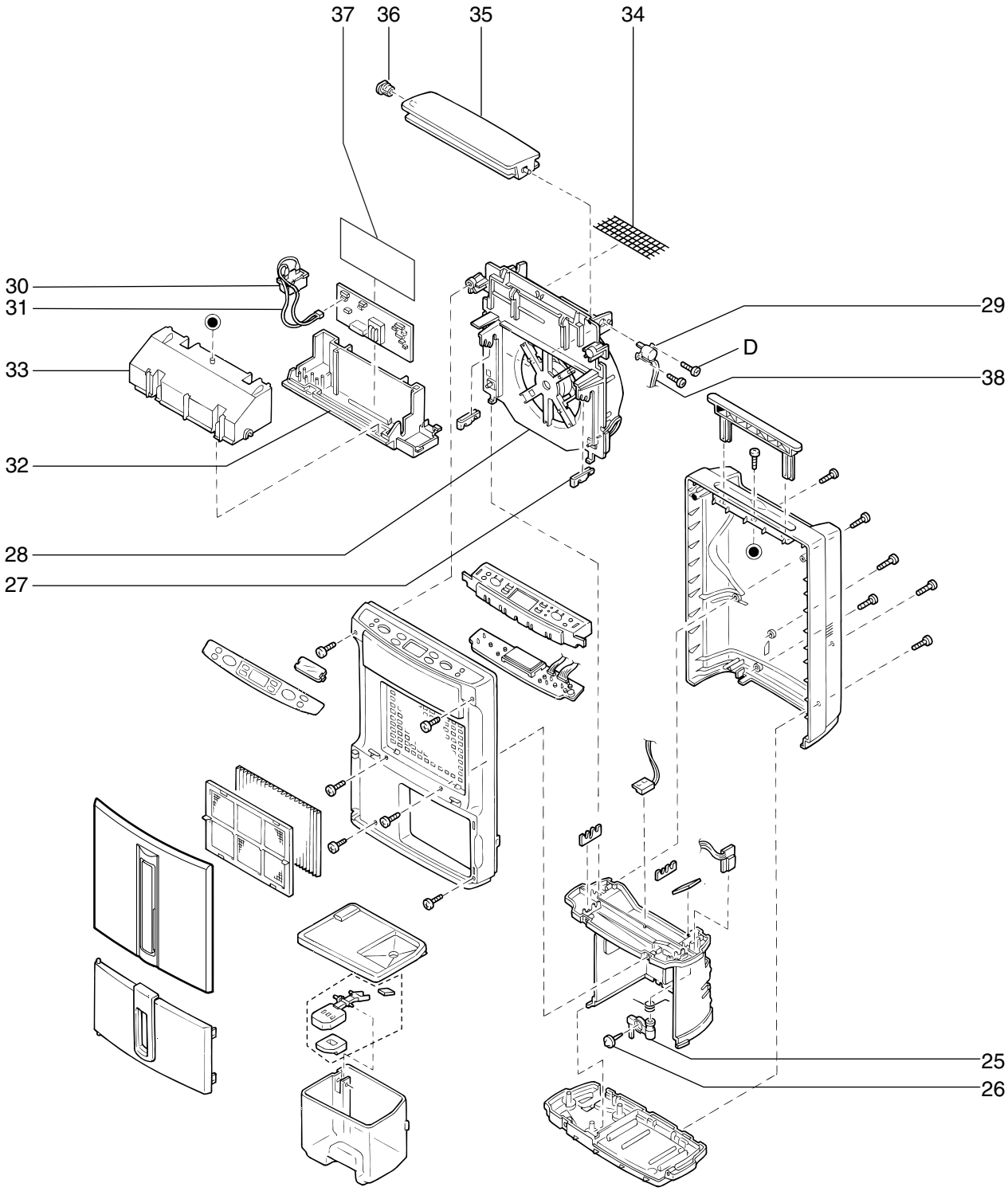
Model MJ-E16VX-S1 Parts List
<Casing and Structure>

Notes:
1. Circled reference numbers indicate performance parts.
2. New parts and the parts that are used only with these models lack compatibility.
3. Those parts that are marked by ⚠ and ▭ are of critical importance for sustaining safety and performance. Use specified parts atreplacement.
4. When ordering parts without part numbers, use the design number. The order may take a while to process.

Exploded View Matching No.	Part Name	Part No.	Safety Part	Pc/1 unit	Compatibility/Miscellaneous	
1	TANK-S(X)	M22 B15 738		1		
2	COVER-TANK-C*VX	M22 B25 741A		1		
3	LID-TANK-S(X)	M22 B15 697		1		
4	FLOAT*ASSY-100S(X)	M22 B25 379		1		
5	CASE-F*100VX-A	M22 B25 233A		1		
6	ESC-SW*E16VX-E1/S1	M22 C44 440		1	(New)	
(7)	PCA*MJ-E16VX*M	M22 C40 450	⚠	1		
8	CLEAR-PLATE*100SX	M22 B15 184		1		
9	FIXTURE PCA-M*100T	M22 B19 781		1		
10	PANEL-F*ASSY(A)	M22 B25 001A		1		
11	FILTER*ASSY-10/16V	M22 B25 100		1		
12	MJPR-10TXFT	M48 5C5 815		1	MJPR-10TXFT (expendable item)	
13	CASE-R*100VX	M22 B25 232		1		
14	HANDLE*100/160V(X)	M22 B25 063		1		
15	BASE-100S(X)	M22 B15 290		1		
16	DRAINPAIN-100S(X)	M22 C44 700		1		
(17)	SWITCH-LEVEL*160WX	M22 C44 501	⚠	1		
18	CUSHION-HEX-U*S(X)	M22 B15 218		2		
19	PACK-SRNSOR*S(X)	M22 B15 222		1		
20	PACK-SENSOR*S(X)-2	M22 B15 223		1		
21	PACKING-SENSOR	M22 B25 224		1		
22	SPRING-S*100S	M22 B15 128		1		
A	SCW-PL-TBFZR 4X12	——		4		
B	SCW-MPFZR M4X14-TORX	——		2		
C	SCW-PL-TBFZR 4X12	——		7		

*1. If the part is out of production, you may be required to use a common part.
*2. Parts found installed in products may have a different part number from service parts. However, there should be no difference inperformance and can be installed.

Model MJ-E16VX-S1 Exploded View
<Casing and Structure>



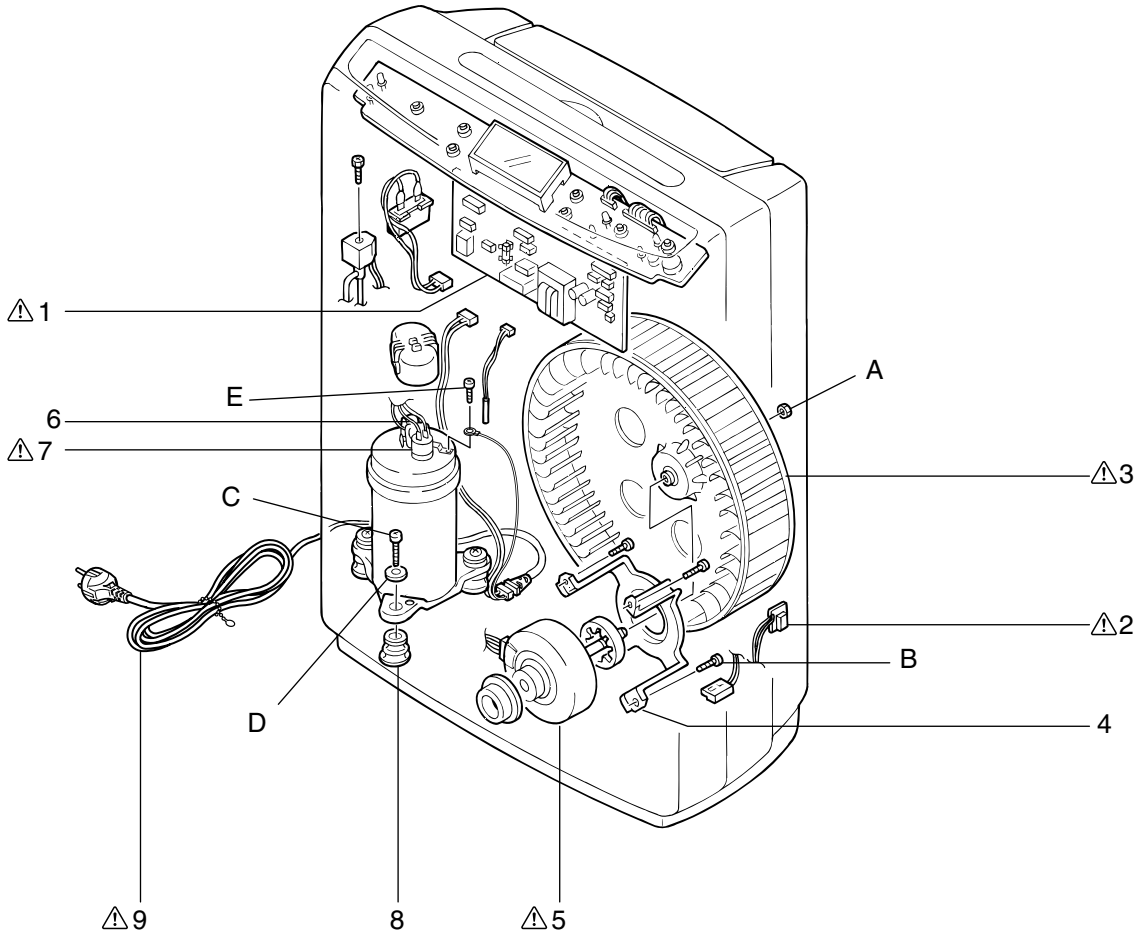
Model MJ-E16VX-S1 Parts List
<Casing and Structure>

Notes:
1. Circled reference numbers indicate performance parts.
2. New parts and the parts that are used only with these models lack compatibility.
3. Those parts that are marked by ⚠ and ▭ are of critical importance for sustaining safety and performance. Use specified parts atreplacement.
4. When ordering parts without part numbers, use the design number. The order may take a while to process.

Exploded View Matching No.	Part Name	Part No.	Safety Part	Pc/1 unit	Compatibility/Miscellaneous	
25	STOPPER-PLATE∗100S(X)	M22 B15 788		1		
26	PACKING-RUB	M22 J67 923		1		
27	CUSHION-HEX-T	M22 B15 219		2		
28	CASING-100V(X)	M22 C44 113		1		
29	STEPPING MOTOR∗NX-R	M22 C44 620		1		
30	RUNCAPACITOR∗E100	M22 C01 353		1		
31	LEAD WIRE-R/C∗140TX	M22 B19 130		1		
32	BOX-PCA∗10/16V	M22 B25 081		1		
33	COVER-BOX∗10/16V	M22 B25 114		1		
34	NET-S(X)	M22 C22 512		1		
35	LOUVER-V(X)	M22 B25 045		1		
36	SUPPORT-LOUVER	M22 B15 036		1		
37	INS-PLATE-MICA∗10	M22 B24 994		1		
38	LEAD WIRE S/M∗VX	——		1		
–	NAME-PLATE∗E16VX-S1	M22 C44 450		1	(New) MEU-IT	
–	NAME-PLATE∗E16VX-S1	M22 C46 450		1	(New) MEU-GER	
–	I.B∗E16VX-S1	M22 C44 791		1	(New)	
D	SCW-TPFZ 3X8N	——		2		

∗1. If the part is out of production, you may be required to use a common part.
∗2. Parts found installed in products may have a different part number from service parts. However, there should be no difference inperformance and can be installed.

Model MJ-E16VX-S1 Exploded View
<Electrical Parts>



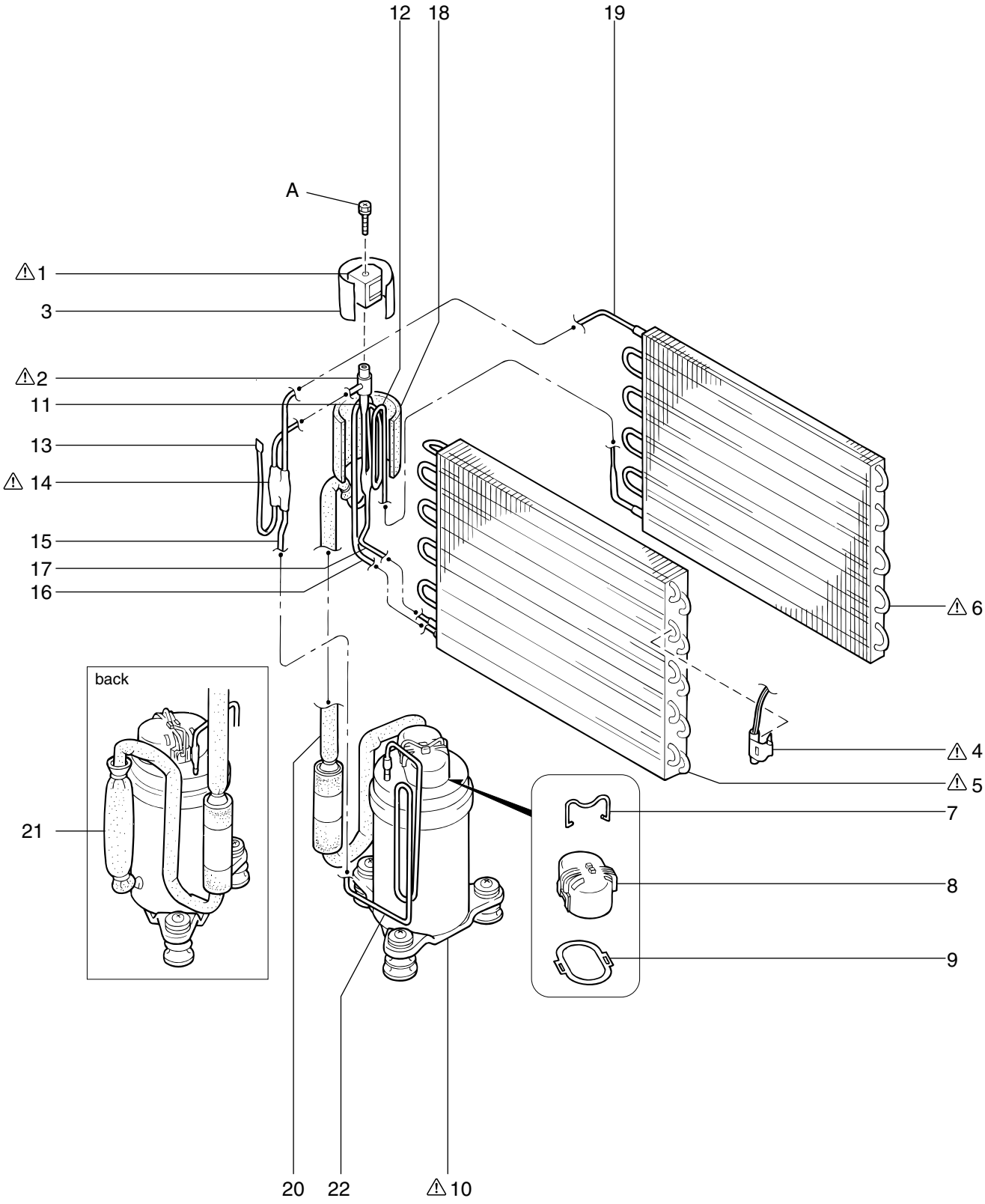
Model MJ-E16VX-S1 Parts List
<Electrical Parts>

Notes:
1. Circled reference numbers indicate performance parts.
2. New parts and the parts that are used only with these models lack compatibility.
3. Those parts that are marked by ⚠ and ▭ are of critical importance for sustaining safety and performance. Use specified parts atreplacement.
4. When ordering parts without part numbers, use the design number. The order may take a while to process.

Exploded View Matching No.	Part Name	Part No.	Safety Part	Pc/1 unit	Compatibility/Miscellaneous	
(1)	PCA∗MJ-E23/16VX∗P	M22 C38 440	⚠	1		
(2)	SENSOR∗HUM-100W(X)	M22 B31 311	⚠	1	(New)	
3	FAN-T(X)∗ASSY	M22 B25 500		1		
4	HOLDING PLATE-M∗NX-R	M22 C44 260		1		
(5)	MOTOR-E16VX	M22 C44 300	⚠	1		
6	LEAD WIRE-E16VX∗ASSY	——		1		
(7)	M-PROTECTOR∗LYDP98X	M22 C44 502	⚠	1		
8	RUBBER-MOTOR	M22 B13 511		3		
(9)	PLUG-CORD∗E16S	M22 C29 395	⚠	1		
A	NUT-HFZR M6	M22 B30 792		1		
B	SCW-PL-TBFZR 4X12	——		3		
C	SCW-TPFZR 5X35M	——		3		
D	SPL WASHER-R	——		3		
E	SCW-MPBN M4X6	——		1		

∗1. If the part is out of production, you may be required to use a common part.
∗2. Parts found installed in products may have a different part number from service parts. However, there should be no difference inperformance and can be installed.

Model MJ-E16VX-S1 Exploded View
<Compressor Parts>



Model MJ-E16VX-S1 Parts List
<Compressor Parts>

Notes:
1. Circled reference numbers indicate performance parts.
2. New parts and the parts that are used only with these models lack compatibility.
3. Those parts that are marked by ⚠ and ▭ are of critical importance for sustaining safety and performance. Use specified parts atreplacement.
4. When ordering parts without part numbers, use the design number. The order may take a while to process.

Exploded View Matching No.	Part Name	Part No.	Safety Part	Pc/1 unit	Compatibility/Miscellaneous	
(1)	S/COIL TAPE∗ASSY-EVX	M22 C44 629	⚠	1	← attached	
(2)	SOLENOIDO VALVE-R	M22 C50 629	⚠	1		
3	TAPE	——		1		
(4)	THERMISTOR-EVA∗W(X)	M22 C44 555	⚠	1	(New)	
(5)	COOLER∗100T(X)	M22 B19 630	⚠	1		
(6)	CONDENSER∗100W(X)	M22 B31 620	⚠	1		
7	CLIP	——		1		
8	TERMINALCOVER	M22 B15 018		1		
9	PACKING	M22 J16 923		1		
(10)	COMP∗XB460VTE	M22 C13 820	⚠	1	XB460VTE ← E16SX-A1	
11	PIPE SV-CT∗100S(X)	——		1		
12	PIPE CT∗100S(X)	——		1		
13	CHARGE PIPE∗100S(X)	——		1		
(14)	JOINT	M22 B15 653	⚠	1		
15	PIPE D-J∗P(X)	——		1		
16	PIPE OUT EVA-100S(X)	——		1		
17	PIPE IN COOL∗100S(X)	——		1		
18	PIPE COVER∗C.T	——		1		
19	PIPE IN CON∗100S(X)	——		1		
20	PIPE SUC∗S(X)∗ASSY	M22 C29 645		1		
21	PIPE COVER∗COMP	M22 B15 221		1		
22	PIPE DIS∗S(X)	M22 B15 650		1		
A	SCRE SEMS M4X0.7X6	——		1		

∗1. If the part is out of production, you may be required to use a common part.
∗2. Parts found installed in products may have a different part number from service parts. However, there should be no difference inperformance and can be installed.

11. Troubleshooting

Symptom	Cause/Remedy
The unit blows warm air	● Dehumidified air passes through heating coils causing it to warm (this unit is not a cooler). This is not a malfunction.
Water does not collect in the water tank (minimal dehumidifying results)	● Check to see if the temperature/humidity is low. Low room temperature/humidity reduces dehumidifying effectiveness. Confirm the current humidity reading (in winter, the air is dry reducing the amount of water collected). This is not a malfunction.
The unit does not operate (no air comes out) The unit stops	● Check to see if the power cord is correctly plugged. → Plug the power cord properly into the power socket. ● Check to see if anything is blocking the air intake or outlet. → Remove the obstruction.
	● Check to see if the pre-filter is clogged. → Clean according to the maintenance procedures.
Stops after a short time	● Is the unit operating in LAUNDRY mode? → The unit may stop in one hour if the room temperature is about 5°C or less.
Louvre does not swing	● Check to see if the unit is in EASY DEHUMIDIFYING, MILDEW GUARD, or AUTO. The unit is automatically controlling the dehumidifier, fan, and standby times.
◯ FULL Lights	● Check to see if the water tank is full. → Empty the water tank and return it to its original position. ● Check to see if the water tank is inserted properly. → Adjust the position of the water tank.
❄ Indicates	● Check to see if the unit is in defrosting mode. The unit activates defrosting mode when the room temperature drops below 15°C. The dehumidifier and blower functions stop during defrosting.
The unit continues to operate even though it is turned off	● Is the unit set to internal drying mode? This function activates automatically after ending operations.
The humidity level does not reach the level set	● Check to see if the room is not too large. → Use within effective boundaries (floor space). ● Check to see if the exits to the room are open. → Refrain from opening doors/windows during operation. ● Check to see if steam producing appliances such as kerosene heaters are on in the vicinity.
The hygrometer reading on the unit differs from other hygrometers in the room	● Hygrometer readings differ from place to place even if in the same room. Use the unit humidity reading as an estimate.
The louvre does not move as set	● Press the Swing louvre switch again.
The water tank contains liquid or white water residue	● The residue is from final product testing at the factory. It is not a result of a malfunction.
There is black residue on the inside of the water tank and lid.	● The residue is from debris in the air. → Clean according to the maintenance procedures.

Symptom		Cause/Remedy
The unit makes noises	**The operating noise is loud/reverberates**	● Check to see if the unit is on a slope or uneven surface. → Move to a sturdy even surface. ● Check to see if the pre-filter is clogged. → Clean according to the maintenance procedures ● Operating the unit in small rooms or in tight spaces sometimes causes the sound to reverberate. → Place a mat underneath the unit.
	The operating sound suddenly increases in volume	● The sound increases when the compressor activates (3 minutes after turning on the unit or during Easy dehumidifier and Automatic modes).
	The wind sound changes in volume	● The volume of the sound differs depending on the angle of the louvre.
	The unit produces a simmering sound	● This is the sound of the refrigerant. The sound can be heard while the refrigerant stabilizes after the unit turns on, changes modes, or stops.
	The unit buzzes intermittently (or the compressor does not activate)	● This is the sound of the compressor. In modes that monitor the humidity level, or during drying inside the compressor operates intermittently causing the sound to be heard occasionally. The compressor does not activate after turning the unit off, or for 3 minutes after plugging the unit into a power socket. (This is to protect the compressor from damage.)
The unit produces an odour	**When first used**	● The heat converter heats rapidly causing a brief odour. This is not a malfunction.
	During internal drying	● The moisture expelled from inside the unit may smell due to odorants* that were not caught by the photocatalytic filter dissolving in the water. This is not a malfunction.

● **Error message (Humidity indicator)**

Digital display	Cause/Remedy
A2 or A3 is displayed	● Check to see if the power cord is plugged into the power socket properly. → Plug the power cord into the power socket properly.
P4 is displayed	● Check to see if anything is blocking the air outlet. → Remove the obstruction, and plug the power cord into the power socket again. ● Check to see if the pre-filter is clogged. → Clean according to the maintenance procedures.
A1, A6, or E0 through E8 is displayed	● **Malfunction** **→ Unplug the power cord, take note of the error message, and contact the place of purchase.**

If the symptoms persist even after following the prescribed remedies, or the error message does not disappear, unplug the power cord, and contact the place of purchase.

Precautions

The following diagrams indicate circumstances where danger can result from mishandling the unit.

⚠ WARNING
Mishandling may result in fatal or serious injuries.

⚠ CAUTION
Mishandling may result in injuries or damage to your home or property, etc.

Meanings of the graphic symbols used in this manual and on the unit are explained below.

Forbidden	Do not disassemble
Keep away from fire	Do not subject to water

Always follow the instructions

⚠ WARNING

Do not start/stop the unit by plugging/unplugging the power cord.

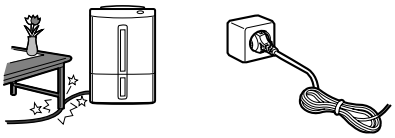
This may result in **fire and/or electric shock**.

Do not use extension cords or multiple head adapters.

This may result in **fire, electric shock or malfunctions**.

Do not damage or modify the power cord or plug.

Do not modify, bundle, twist, bend or heat the power cord. Do not place under objects or use with the end close to the plug bent.

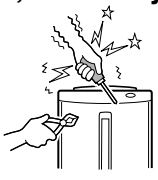


The cord may be damaged resulting in **fire or electric shock**. (Keep pets from biting the cord.)

Do not put your fingers or any long object, into the air intake/outlet. Do not touch the swing louvre.

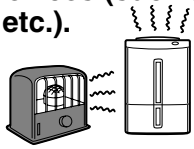
The internal fan rotates at high speeds, and such actions may result in **injury or malfunctions**.

Do not attempt to repair, disassemble, or modify the unit.



This may result in **fire and/or electric shock**. Refer servicing to your dealer or Mitsubishi Electric Service Centre.

Do not put the unit near heat-generating devices (such as stoves, fan heaters, etc.).



The plastic parts may **melt and cause fire**.

Wipe dust off the power plug and insert the plug firmly.

If the plug is not fully inserted into the socket, dust may gather on the connectors which may cause **fire and/or electric shock**.

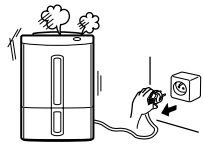
Use 220-240V AC power sockets.

Connecting to power sockets other than 220-240V AC may result in **fire and/or electric shock**.

Remove water that has collected in the tank.

Accidentally drinking the water or using it for other purposes may cause **illness and/or unforeseen accidents**.

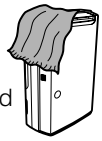
Should abnormal symptoms occur (a burning smell, etc.), switch off the unit and unplug it from the socket.



Continuing to operate the unit may result in **fire, electric shock, or malfunctions**. Contact your dealer or Mitsubishi Electric Service Centre for consultation.

⚠ CAUTION

Do not cover the front or side air intakes or the air outlet with cloth, curtain, etc.



This results in poor ventilation and may cause **heat generation/fire**.

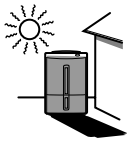
Do not stand on, sit on or lean against the unit.

The unit may tip over causing **injury**.

Do not put vases or any other objects filled with water on the unit.

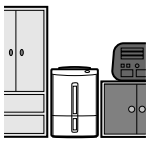
Water may leak into the unit adversely affecting electric insulation and cause **electric shock and/or fire by short-circuiting**.

Do not use the unit where it may be exposed to direct sunlight or other weather conditions. (This unit is for indoor use only.)



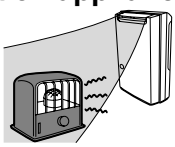
This may cause **overheating, electric shock and/or fire caused by an electric leak**.

Do not use the unit in narrow, enclosed places such as inside closets, between pieces of furniture, etc.



This results in poor ventilation and may cause **heat generation and/or fire**.

Do not use combustion appliances in the path of the air outlet.

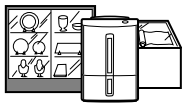


This may cause **incomplete combustion** in the appliance.

Do not use the unit in places where chemicals are used (such as hospitals, factories, laboratories or beauty salons).

Chemicals and solvents evaporated in the air may harm the unit and cause water in the tank to leak, **resulting in damage to property**.

Do not use the unit for special purposes, such as preservation of food, art or scientific works.



This may negatively affect **the quality of the items stored**.

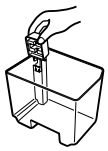
Do not drain water continuously if there is a possibility that temperature around the hose could drop to freezing point.

Water inside the hose may freeze and prevent the water in the tank from flowing out.
The water may leak from the unit and **damage surrounding objects**.

Do not use the unit in places that may be subject to oil or flammable gas leakage.

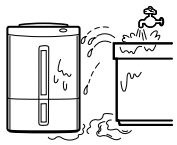
Such a leak around the unit may cause **combustion** and **fire**.

Do not remove the Styrofoam from the floating element.



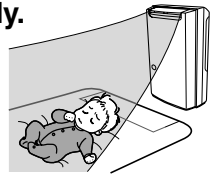
The floating element will not be able to detect a full tank resulting in water leakage, which may **damage surrounding objects or cause electric shock and/or an electric leak**.

Do not wash the unit with water. Do not use the unit where it is likely to come in contact with water.



Exposure to water may result in **fire or electric shock caused by an electric leak** .

Do not point air-flow from the unit directly at the body.

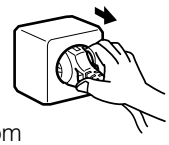


If air-flow is directed at the body for long periods, it may **harm one's physical condition** and **lead to dehydration**.

Install the unit in a location where the floor is flat and stable.

If the unit falls over, the water collected in the water tank may leak damaging surrounding objects and in turn result in **fire or electric shock caused by an electrical leak**.

Grasp the plug and remove from the power socket.



When removing the plug from the power socket, do not pull on it diagonally or by the cord as this may cause the projections/wiring to be **damaged resulting in a short circuit, electric shock or fire**.

Before moving the unit always switch it off, unplug it and remove water from the water tank.

Moving the unit with water in its tank may cause the water to leak and **damage the surrounding objects and in turn result in electric shock and/or an electric leak**.

Precautions (cont.)

⚠ CAUTION

After emptying the tank, transport the unit by grasping the handle firmly.

Losing your footing while carrying the unit may cause **personal injury or damage to the floor**.

When using the continuous drainage outlet, make sure to position the hose so that the water drains without obstruction.

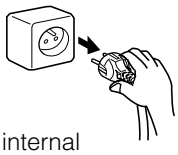
The water in the tank may leak and **damage surrounding objects**.

When draining water continuously or left unattended for long periods, inspect the unit every two weeks.

Do not allow debris to clog the filter/hose as this may cause **over-heating/leakage**.

Use the unit with caution in rooms where the walls, furniture and art work are vulnerable to dry air, as it may cause cracks and warping.

Switch the unit off and unplug from the power source when cleaning it.



When the unit is on, the internal fan rotates at high speeds and may cause **injury**.

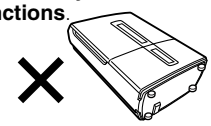
Unplug the unit from the power source when not using the unit for an extended period of time.

Otherwise it may cause **fire and/or electric shock caused by an electric leak**.

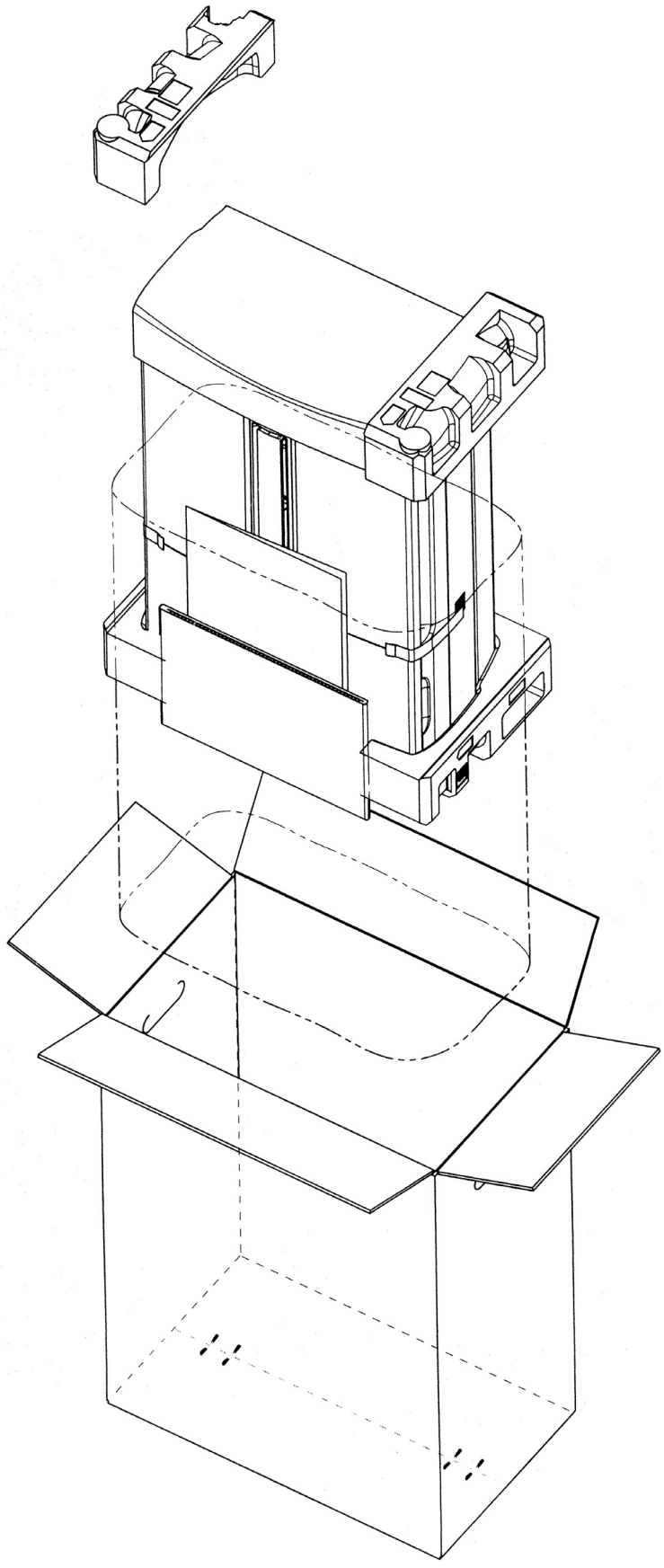
Warning

- **Keep the unit always in an upright position.** Inclining the unit may cause water in the tank to leak into the unit, **resulting in malfunction**. Should you incline the unit accidentally, contact the place of purchase for advice.

- **Do not carry the unit horizontally.** This may **result in malfunctions**.



Packaging diagram



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